LonGP: an additive Gaussian process regression model for longitudinal study designs

Lu Cheng [1,*], Siddharth Ramchandran [1], Tommi Vatanen [2], Niina Lietzen [3], Riitta Lahesmaa [3], Aki Vehtari [1] and Harri Lähdesmäki [1,*]

February 3, 2018

[1]Department of Computer Science, Aalto University School of Science, FI-00076 Aalto, Finland.
[2]Broad Institute of MIT and Harvard, Cambridge, MA 02142, USA.
[3]Turku Centre for Biotechnology, University of Turku and Åbo Akademi University, Turku 20520, Finland.
[*]To whom correspondence should be addressed.

Abstract

Motivation: Biomedical research typically involves longitudinal study designs where samples from individuals are measured repeatedly over time and the goal is to identify risk factors (covariates) that are associated with an outcome value. General linear mixed effect models have become the standard workhorse for statistical analysis of data from longitudinal study designs. However, analysis of longitudinal data can be complicated for both practical and theoretical reasons, including difficulties in modelling, correlated outcome values, functional (time-varying) covariates, nonlinear effects, and model inference.
Results: We present LonGP, an additive Gaussian process regression model for analysis of experimental data from longitudinal study designs. LonGP implements a flexible, non-parametric modelling framework that solves commonly faced challenges in longitudinal data analysis. In addition to inheriting all standard features of Gaussian processes, LonGP can model time-varying random effects and non-stationary signals, incorporate multiple kernel learning, and provide interpretable results for the effects of individual covariates and their interactions. We develop an accurate Bayesian inference and model selection method, and implement an efficient model search algorithm for our additive Gaussian process model. We demonstrate LonGP's performance and accuracy by analysing various simulated and real longitudinal -omics datasets. Our work is accompanied by a versatile software implementation.
Availability: LonGP software tool is available at http://research.cs.aalto.fi/csb/software/longp/.
Contact: lu.cheng.ac@gmail.com, harri.lahdesmaki@aalto.fi

1 Introduction

A majority of biomedical research involves longitudinal studies where individuals are followed over a period of time and measurements are repeatedly collected from the subjects of the study. Longitudinal studies are effective in identifying various risk factors that are associated with an outcome, such as disease initiation, disease onset or any disease associated molecular biomarker. Characterisation of such risk factors is essential in understanding disease pathogenesis as well as in assessing individuals' disease risk, patient stratification, treatment choice evaluation and, in future personalised medicine paradigm, planning disease prevention strategies.

There are several classes of longitudinal study designs, including prospective vs. retrospective studies and observational vs. experimental studies, and each of these can be implemented with a particular application-specific experimental design. As the risk factors (or covariates) can also be either static or time-varying, statistical analysis tools need to be versatile enough so that they can be appropriately tailored to every application. General linear mixed effect models and generalised estimating equations have become popular statistical techniques for longitudinal data analysis (Gibbons *et al.*, 2010). Although numerous advanced extensions of these two statistical techniques have been proposed, longitudinal data analysis is still complicated for several reasons, such as difficulties in choosing covariance structures to model correlated outcomes, handling irregular sampling times and missing values, accounting for time-varying covariates, choosing appropriate nonlinear effects, modelling non-stationary signals, and accurate model inference.

Modern statistical methods for longitudinal data analysis make less or better assumptions about the underlying data generating mechanisms. These methods use predominantly non-parametric models, such as splines (Wu and Zhang, 2006), and more recently latent stochastic processes, such as Gaussian processes (GP). Several Bayesian non-parametric methods have been proposed for longitudinal and other data analysis. Most pertinent to this work are recent work on Bayesian semi-parametric models (Quintana *et al.*, 2016) and additive GP regression (Qamar and Tokdar, 2014) for longitudinal data analysis. Interestingly, very similar models have been developed in machine learning community. Additive GPs together with type-II maximum likelihood based multiple kernel learning were introduced in (Duvenaud *et al.*, 2011). Similar GP multiple kernel learning has also been formulated in terms of hypothesis testing (Liu and Coull, 2017).

We present a non-parametric model, `LonGP`, for longitudinal data analysis that is formulated as an additive GP which handles commonly faced challenges in longitudinal data analysis. Being a GP model, `LonGP` inherits the best features of GPs. Additionally, it can model time-varying random effects and non-stationary signals as well as provide interpretable results for the effects of individual covariates and their interactions. We develop a fully Bayesian predictive inference for `LonGP` and use that to carry out model selection, i.e., to identify covariates that are associated with a given study outcome value. We demonstrate `LonGP`'s performance and accuracy by analysing various simulated and real longitudinal -omics data sets.

2 Methods

2.1 Notation

We model target variables (gene/protein/bacteria/etc) one at a time. Let us assume that there are P individuals and there are n_i time series measurements from the ith individual. The total number of data points is thus $N = \sum_{i=1}^{P} n_i$. We denote the target variable by a column vector $\boldsymbol{y} = (y_1, y_2, ...y_N)^T$ and the covariates by $X = (\boldsymbol{x}_1, \boldsymbol{x}_2, ..., \boldsymbol{x}_N)$, where $\boldsymbol{x}_i = (x_{i1}, x_{i2}, ..., x_{id})^T$ is a d-dimensional column vector and d is the number of covariates. We denote the domain of the jth variable by $\mathcal{X}_j$ and the joint domain of all covariates is $\mathcal{X} = \mathcal{X}_1 \times \mathcal{X}_2 \times ... \times \mathcal{X}_d$. In general, we use a bold font letter to denote a vector, an uppercase letter to denote a matrix and a lowercase letter to denote a scale value.

2.2 Gaussian process

Gaussian process (GP) can be seen as a distribution of nonlinear functions (Rasmussen and Williams, 2006). For inputs $\boldsymbol{x}, \boldsymbol{x}' \in \mathcal{X}$, GP is defined as

$$f(\boldsymbol{x}) \sim GP(\mu(\boldsymbol{x}), k(\boldsymbol{x}, \boldsymbol{x}')), \tag{1}$$

where $\mu(\boldsymbol{x})$ is the mean and $k(\boldsymbol{x}, \boldsymbol{x}')$ is a positive-semidefinite kernel function that defines the covariance between any two realizations of $f(\boldsymbol{x})$ and $f(\boldsymbol{x}')$ by

$$k(\boldsymbol{x}, \boldsymbol{x}') = \mathrm{cov}(f(\boldsymbol{x}), f(\boldsymbol{x}')), \tag{2}$$

which is called "kernel" for short. The mean is often assumed to be zero, i.e., $\mu(\boldsymbol{x}) \doteq 0$, and the kernel has parameters $\boldsymbol{\theta}$, i.e., $k(\boldsymbol{x}, \boldsymbol{x}'|\boldsymbol{\theta})$. For any finite collection of inputs $X = (\boldsymbol{x}_1, \boldsymbol{x}_2, ..., \boldsymbol{x}_N)$, the function values $\boldsymbol{f}(X) = (f(\boldsymbol{x}_1), f(\boldsymbol{x}_2), ..., f(\boldsymbol{x}_N))^T$ have joint multivariate Gaussian distribution

$$\boldsymbol{f}(X) \sim N(\boldsymbol{0}, K_{X,X}(\boldsymbol{\theta})), \tag{3}$$

where elements of the N-by-N covariance matrix are defined by the kernel $[K_{X,X}(\boldsymbol{\theta})]_{i,j} = k(\boldsymbol{x}_i, \boldsymbol{x}_j|\boldsymbol{\theta})$.

We use the following hierarchical Gaussian process model

$$\begin{aligned} \boldsymbol{\theta} &\sim \pi(\boldsymbol{\phi}) \\ \boldsymbol{f} &\sim N(\boldsymbol{0}, K_{X,X}(\boldsymbol{\theta})) \\ \boldsymbol{y} &\sim N(\boldsymbol{f}, \sigma_\epsilon^2 I), \end{aligned} \tag{4}$$

where $\pi(\boldsymbol{\phi})$ defines a prior for the kernel parameters (including σ_ϵ^2), σ_ϵ^2 is the noise variance and I is the N-by-N identity matrix. For a Gaussian noise model we can marginalise $\boldsymbol{f}$ analytically (Rasmussen and Williams, 2006)

$$\begin{aligned} p(\boldsymbol{y}|X,\boldsymbol{\theta}) &= \int p(\boldsymbol{y}|\boldsymbol{f},X,\boldsymbol{\theta})p(\boldsymbol{f}|X,\boldsymbol{\theta})d\boldsymbol{f} \\ &= N(\mathbf{0}, K_{X,X}(\boldsymbol{\theta})+\sigma_\epsilon^2 I). \end{aligned} \tag{5}$$

2.3 Additive Gaussian process

To define a flexible and interpretable model, we use the following additive GP model with D kernels

$$\begin{aligned} f(\boldsymbol{x}) &= f^{(1)}(\boldsymbol{x}) + f^{(2)}(\boldsymbol{x}) + ... + f^{(D)}(\boldsymbol{x}) \\ y &= f(\boldsymbol{x}) + \epsilon, \end{aligned} \tag{6}$$

where each $f^{(j)}(\boldsymbol{x}) \sim GP(0, k^{(j)}(\boldsymbol{x},\boldsymbol{x}'|\boldsymbol{\theta}^{(j)}))$ is a separate GP with kernel specific parameters $\boldsymbol{\theta}^{(j)}$ and ϵ is the additive Gaussian noise. By definition, for any finite collection of inputs $X = (\boldsymbol{x}_1, \boldsymbol{x}_2, ..., \boldsymbol{x}_N)$, each GP $\boldsymbol{f}^{(j)}(X)$ follows a multivariate Gaussian distribution. Since a sum of multivariate Gaussian random variables is still Gaussian, the latent function $\boldsymbol{f}$ also follows a multivariate Gaussian distribution. Denote $\boldsymbol{\Theta} = (\boldsymbol{\theta}^{(1)}, \boldsymbol{\theta}^{(2)}, ..., \boldsymbol{\theta}^{(D)}, \sigma_\epsilon^2)$, then the marginal likelihood for the target variable $\boldsymbol{y}$ is

$$p(\boldsymbol{y}|X,\boldsymbol{\Theta}) = N\left(\mathbf{0}, \sum_{j=1}^{D} K_{X,X}^{(j)}(\boldsymbol{\theta}^{(j)}) + \sigma_\epsilon^2 I\right), \tag{7}$$

where the latent function $\boldsymbol{f}$ has been marginalised out as in Eq. (5). To simplify notation, we define

$$K_{\mathbf{y}}(\boldsymbol{\Theta}) = \sum_{j=1}^{D} K_{X,X}^{(j)}(\boldsymbol{\theta}^{(j)}) + \sigma_\epsilon^2 I. \tag{8}$$

For the purposes of identifying covariate subsets that are associated with a target variable, we assume that each GP depends only on a small subset of covariates $f^{(j)}(\boldsymbol{x}) : \mathcal{X}^{(j)} \to \mathcal{Y}$, where $\mathcal{X}^{(j)} = \prod \mathcal{X}_i, i \in I_j \subseteq \{1, \ldots, d\}$ and $\mathcal{Y}$ is the domain for target variable. I_j are indices of the covariates associated with the jth kernel.

2.4 Kernel functions for covariates

Longitudinal biomedical studies typically include a variety of continuous, categorical and binary covariates. Typical continuous covariates include *age*, *time from a disease event* (sampling time point minus disease event time point), and *season* (time from beginning of a year). Typical categorical or binary covariates include *group* (case or control), *gender* and *id* (id of an individual). In practice, a key question in setting up the additive GP model is how to choose appropriate kernels for different covariates and their subsets (or interactions).

2.4.1 Stationary kernels

In `LonGP`, we use the following specific kernels which only involve one or two covariates.

- Squared exponential (SE) kernel for continuous covariates

$$k_{\text{se}}(x_i, x_j|\boldsymbol{\theta}_{\text{se}}) = \sigma_{\text{se}}^2 \exp\left(-\frac{(x_i - x_j)^2}{2\ell_{\text{se}}^2}\right), \tag{9}$$

  where ℓ_{se} is the length-scale parameter, σ_{se}^2 is the magnitude parameter and $\boldsymbol{\theta}_{\text{se}} = (\ell_{\text{se}}, \sigma_{\text{se}}^2)$. Length-scale ℓ_{se} controls the smoothness and magnitude parameter σ_{se}^2 controls the magnitude of the kernel.

- Periodic kernel for continuous covariates

$$k_{\text{pe}}(x_i, x_j|\boldsymbol{\theta}_{\text{pe}}) = \sigma_{\text{pe}}^2 \exp\left(-\frac{2\sin^2(\pi(x_i - x_j)/\gamma)}{\ell_{\text{pe}}^2}\right), \tag{10}$$

  where ℓ_{pe} is the length-scale parameter, σ_{pe}^2 is the magnitude parameter, γ is the period parameter and $\boldsymbol{\theta}_{\text{pe}} = (\ell_{\text{pe}}, \sigma_{\text{pe}}^2, \gamma)$. Length-scale ℓ_{pe} controls the smoothness, σ_{pe}^2 controls the magnitude and γ is the period of the kernel. In our model, γ corresponds to a year.

- Constant kernel
$$k_{\text{co}}(x_i, x_j|\boldsymbol{\theta}) = \sigma_{\text{co}}^2, \tag{11}$$
where $\boldsymbol{\theta} = (\sigma_{\text{co}}^2)$ is the magnitude parameter of the constant signal.
- Categorical kernel for discrete-valued covariates
$$k_{\text{ca}}(x_i, x_j) = \begin{cases} 1, & \text{if } x_i = x_j \\ 0, & \text{otherwise.} \end{cases} \tag{12}$$
- Binary (mask) kernel for binary covariates
$$k_{\text{bi}}(x_i, x_j) = \begin{cases} 1, & \text{if } x_i = 1 \text{ and } x_j = 1 \\ 0, & \text{otherwise.} \end{cases} \tag{13}$$
- Product kernel between any two valid kernels, such as $k_{\text{bi}}(\cdot)$ and $k_{\text{se}}(\cdot)$ (similarly for any other pair of kernels)
$$k_{\text{bi}\times\text{se}}(\cdot) = k_{\text{bi}}(x_{ip}, x_{jp}|\boldsymbol{\theta}_{\text{bi}}^{(p')})k_{\text{se}}(x_{iq}, x_{jq}|\boldsymbol{\theta}_{\text{se}}^{(q')}), \tag{14}$$
where $\boldsymbol{\theta}_{\text{bi}}^{(p')}$ and $\boldsymbol{\theta}_{\text{se}}^{(q')}$ are kernel parameters for the pth and qth covariates, respectively.

2.4.2 Non-stationary kernel

It may be realistic to assume that the target variable (e.g., a protein) changes rapidly only near a special event, such as disease initiation or onset. This poses a challenge for GP modelling with squared exponential kernel since the kernel is stationary: changes are homogeneous across the whole time window. Non-stationary GPs can be implemented by using special non-stationary kernels, such as the neural network kernel, by defining the kernel parameters to depend on input covariates (Heinonen *et al.*, 2016; Tolvanen *et al.*, 2014; Saul *et al.*, 2016) or via input or output warpings (Snelson *et al.*, 2004). We propose to use the input warping approach and define a bijective mapping $\omega : (-\infty, +\infty) \to (-c, c)$ for a continuous time/age covariate t as

$$\omega(t) = 2c \cdot \left(-0.5 + \frac{1}{1 + e^{-a(t-b)}}\right), \tag{15}$$

where a, b and c are predefined parameters: a controls the size of the effective time window, b controls its location, and c controls the maximum range. The non-stationary kernel is then defined as

$$k_{\text{ns}}(t, t'|\boldsymbol{\theta}_{\text{se}}) = \sigma_{\text{se}}^2 \exp\left(-\frac{(\omega(t) - \omega(t'))^2}{2\ell_{\text{se}}^2}\right), \tag{16}$$

where $\boldsymbol{\theta}_{\text{se}}$ are the parameters of the SE kernel.

Suppl. Fig. 1 shows an example transformation with $a = 0.5$, $b = 0$ and $c = 40$, where we limit the disease related change to be within one year of the disease event. Effectively, all changes in the transformed space corresponds approximately to ± 12 month time window in the original space. Suppl. Fig. 2 shows randomly sampled functions using stationary and non-stationary SE kernels with the same kernel parameters. The non-stationary SE kernel naturally models signals that are spike-like or exhibit a level difference between before and after the disease event, which can be interpreted as a permanent disease effect.

The same parameters as Suppl. Fig. 1 are used for non-stationary kernels in all experiments of Sec. 3.

2.4.3 Kernel specification in practice

The datasets analysed in this work include 11 covariates and covariate pairs which we model using the following kernels (see Sec. 2.5 for prior specifications).

- *age*: The shared age effect is modelled with a slowly changing stationary SE kernel.
- *time from a disease event* or *diseaseAge*: We use the product of the binary kernel and the non-stationary SE kernel (assuming cases are coded as 1 and controls as 0).
- *season*: We assume that the target variable exhibits an annual period and is modelled with the periodic kernel.

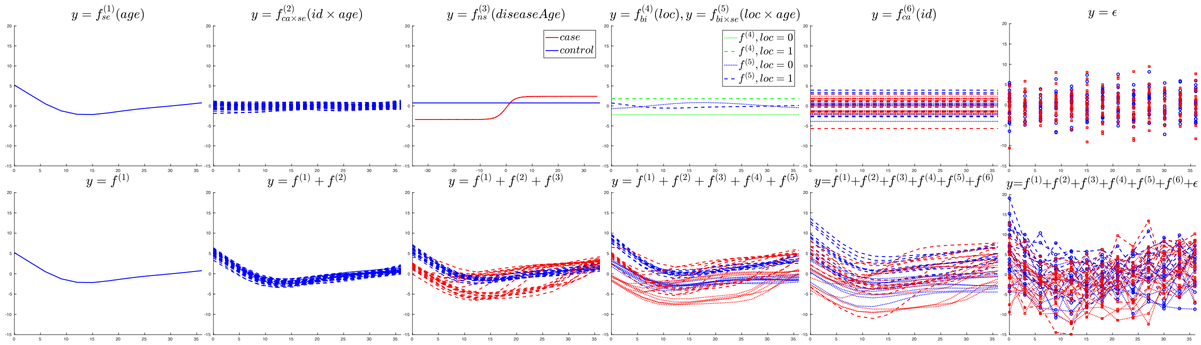

Figure 1: Additive Gaussian process. The top panel shows random functions drawn from different components, i.e., GPs of the specific kernels. The lower panel shows the cumulative effects of the different components. The bottom right panel shows the simulated data.

- *group*: We model a baseline difference between the cases and controls, which corresponds to average difference between the two groups, using the product of the binary kernel and the constant kernel.
- *gender*: We use the same kernel as for *group* covariate.
- *loc*: Binary covariate indicating if an individual comes from a certain location. We use the same kernel as for *group* covariate.
- *id*: We assume baseline differences between different individuals and model that by the product of the categorical kernel and the constant kernel.
- *group* × *age*: We assume that the differences between cases and controls varies across age. That difference is modelled by the product of the binary kernel and the stationary SE kernel.
- *gender* × *age*: The same kernel as for *group* × *age* is used for this interaction term. It implements a different age trend for males and females.
- *id* × *age*: We assume different individuals exhibit different age trends. This longitudinal random effect is modelled by the product of the categorical kernel and the SE kernel. This kernel is especially helpful for modelling individuals with outlying data points.
- *group* × *gender*: This interaction term assumes that male (or female) cases have a baseline difference compared to others. The product of two binary kernels and the constant kernel is used.

Although discrete covariates are modelled as a product of the constant kernel and the binary or categorical kernel, the constant kernel is not explicitly included in our notation.

Fig. 1 shows an example with data simulated from an additive GP model, $y = f^{(1)}_{\text{se}}(age) + f^{(2)}_{\text{ca}\times\text{se}}(id \times age) + f^{(3)}_{\text{ns}}(diseaseAge) + f^{(4)}_{\text{bi}}(loc) + f^{(5)}_{\text{bi}\times\text{se}}(loc \times age) + f^{(6)}_{\text{ca}}(id) + \epsilon$. This example provides an intuitive illustration of the effects of different kernels described above. In case a study contains other covariates or interaction terms, the additive Gaussian process regression provides a very flexible modelling framework that can be adjusted to a number of different applications.

In practice, we often observe missing values in the covariates. Missing values can be due to technical problems in measurements or because some covariates may not be applicable for certain samples, e.g., *diseaseAge* is not applicable to controls since they do not have a disease. In `LonGP`, we construct a binary flag vector for each covariate. The missing values are flagged as 0 and non-missing values are flagged as 1. Then, we construct a binary kernel for this flag vector and multiply it with any kernel that involves the covariate. Consequently, any kernel involving a missing value is evaluated to 0, which means that their contribution to the target variable is 0. All missing values are handled in this way by default and we do not use any extra notations for it. Interaction terms always refer to product kernels with non-missing values, assuming missing values are already handled.

2.5 Prior specifications

Before the actual GP regression, we standardise the target variable and all continuous covariates such that the mean is zero and the standard deviation is one. This helps in defining generally applicable priors for the kernel parameters. After the GP regression, the predictions are transformed back to the original scale. We visualise the results in the original scale after centering the data by subtracting the mean.

We define a prior $p(\boldsymbol{\Theta}) = \prod_{j=1}^{D} p(\boldsymbol{\theta}^{(j)}) \times p(\sigma_\epsilon^2)$ for the kernel parameters as follows. For continuous covariates without interactions, we use the log normal prior ($\mu = 0$ and $\sigma^2 = (\log(1) - \log(0.1))^2/4$) for the length-scales (ℓ_{se} and ℓ_{pe}) and the square root student-t prior ($\mu = 0$, $\sigma^2 = 1$ and $\nu = 20$) for the magnitude parameters (σ_{se}^2 and σ_{pe}^2). This length-scale prior penalises small length-scales such that smoothness less than 0.1 has very small probability and the mode is approximately at 0.3. For continuous covariates with interactions, the prior for the magnitude parameters is the same as for without interactions and the half truncated student-t prior ($\mu = 0$, $\sigma^2 = 1$, $\nu = 4$) is used for the length-scale, which allows smaller length-scales.

Scaled inverse chi-squared prior ($\sigma^2 = 0.01$ and $\nu = 1$) is used for the noise variance parameter σ_ϵ^2. The period parameter γ of the periodic kernel is predefined by the user. Square root student-t prior ($\mu = 0$, $\sigma^2 = 1$ and $\nu = 4$) is used for the magnitude parameter σ_{co}^2 of all constant kernels. Suppl. Fig. 3 visualises all the above-described priors with their default hyperparameter values.

2.6 Model inference and prediction

Given the additive GP model specified in Sections 2.2-2.5, we are next interested in the posterior inference of the model conditioned on data $(\boldsymbol{y}, X)$. Assume, for now, that for each additive component $f^{(j)}$ the kernel $k^{(j)}(\cdot)$, its inputs $\mathcal{X}^{(j)}$ and prior are specified. We use two different inference methods, Markov chain Monte Carlo (MCMC) and a deterministic evaluation of the posterior with the central composite design (CCD).

For MCMC we use the slice sampler as implemented in the GPStuff package (Neal, 2003; Vanhatalo *et al.*, 2013) to sample the parameter posterior

$$p(\boldsymbol{\Theta}|\boldsymbol{y}, X) \propto p(\boldsymbol{y}|X, \boldsymbol{\Theta})p(\boldsymbol{\Theta}), \tag{17}$$

where the likelihood is defined in Eq. (7). After convergence checking from 4 independent Markov chains (details in Suppl. Sec. 2), we obtain S posterior samples $\{\boldsymbol{\Theta}_s\}_{s=1}^{S}$, where $\boldsymbol{\Theta}_s = (\boldsymbol{\theta}_s^{(1)}, \boldsymbol{\theta}_s^{(2)}, ..., \boldsymbol{\theta}_s^{(D)}, \sigma_{\epsilon,s}^2)$. We use the posterior samples to approximate the predictive density for test data $X^* = (\boldsymbol{x}_1^*, \boldsymbol{x}_2^*, ..., \boldsymbol{x}_n^*)$

$$\begin{aligned} p(\boldsymbol{f}^*|\boldsymbol{y}, X, X^*) &= \int p(\boldsymbol{f}^*|\boldsymbol{y}, X, X^*, \boldsymbol{\Theta})p(\boldsymbol{\Theta}|\boldsymbol{y}, X)d\boldsymbol{\Theta} \\ &\approx \frac{1}{S}\sum_{s=1}^{S} p(\boldsymbol{f}^*|\boldsymbol{y}, X, X^*, \boldsymbol{\Theta}_s) \\ &= \frac{1}{S}\sum_{s=1}^{S} N(\boldsymbol{\mu}_s, \Sigma_s), \end{aligned} \tag{18}$$

where

$$\boldsymbol{\mu}_s = K_{X^*,X}(\boldsymbol{\Theta}_s)K_{\mathbf{y}}(\boldsymbol{\Theta}_s)^{-1}\boldsymbol{y} \tag{19}$$

$$\Sigma_s = K_{X^*,X^*}(\boldsymbol{\Theta}_s) - K_{X^*,X}(\boldsymbol{\Theta}_s)K_{\mathbf{y}}(\boldsymbol{\Theta}_s)^{-1}K_{X,X^*}(\boldsymbol{\Theta}_s) \tag{20}$$

are the standard GP prediction equations adapted to additive GPs with $K_{X^*,X}(\boldsymbol{\Theta}_s) = \sum_{j=1}^{D} K_{X^*,X}^{(j)}(\boldsymbol{\theta}_s^{(j)})$ encoding the sum of cross-covariances between the inputs X and test data points X^* (K_{X^*,X^*} is defined similarly) and $K_{\mathbf{y}}(\boldsymbol{\Theta}_s)$ is defined in Eq. (8).

As an alternative approach to slice sampling for higher dimensional models, we also use a deterministic finite sum using the central composite design (CCD) to approximate the predictive densities for GPs as proposed in (Rue *et al.*, 2009; Vanhatalo *et al.*, 2010). CCD assumes a split-Gaussian posterior $q(\cdot)$ for (log-transformed) parameters $\boldsymbol{\gamma} = \log(\boldsymbol{\Theta})$ and defines a set of R points $\{\boldsymbol{\gamma}_r\}_{r=1}^{R}$ (fractional factorial design, the mode and so-called star points along whitened axes) to estimate the predictive density with a finite sum

$$\begin{aligned} p(\boldsymbol{f}^*|\boldsymbol{y}, X, X^*) &\approx \sum_{r=1}^{R} p(\boldsymbol{f}^*|\boldsymbol{y}, X, X^*, \boldsymbol{\gamma}_r)q(\boldsymbol{\gamma}_r)\Delta_r \\ &= \sum_{r=1}^{R} N(\boldsymbol{\mu}_r, \Sigma_r)q(\boldsymbol{\gamma}_r)\Delta_r, \end{aligned} \tag{21}$$

where $N(\boldsymbol{\mu}_r, \Sigma_r)$ is computed as in Eqs. (19-20), $q(\boldsymbol{\gamma}_r)$ is the split-Gaussian posterior and Δ_r are the area weights for the finite sum (see (Vanhatalo *et al.*, 2010) for details).

Predictions and visualisations for an individual kernel $k^{(j)}$ $(1 \leq j \leq D)$ are obtained by replacing $\boldsymbol{\mu}_s$ and Σ_s in Eqs. (18) and (21) with

$$\boldsymbol{\mu}_s^{(j)} = K^{(j)}_{X^*,X}(\boldsymbol{\theta}_s^{(j)}) K_{\mathbf{y}}(\boldsymbol{\Theta}_s)^{-1}\boldsymbol{y} \tag{22}$$

and

$$\Sigma_s^{(j)} = K^{(j)}_{X^*,X^*}(\boldsymbol{\theta}_s^{(j)}) - K^{(j)}_{X^*,X}(\boldsymbol{\theta}_s^{(j)}) K_{\mathbf{y}}(\boldsymbol{\Theta}_s)^{-1} K_{X,X^*}(\boldsymbol{\theta}_s^{(j)}). \tag{23}$$

Similarly, predictions for a subset of kernels are obtained by replacing $K^{(j)}_{X^*,X}(\boldsymbol{\theta}_s^{(j)})$ and $K^{(j)}_{X^*,X^*}(\boldsymbol{\theta}_s^{(j)})$ with the relevant sums.

2.7 Model comparison

We have described how to build and infer an additive GP model for a given target variable using a set of kernels and a set of covariates for each kernel. A model M can be specified by a 3-tuple $(D, \{k^{(j)}\}_{j=1}^D, \{I_j\}_{j=1}^D)$, where $D \geq 1$. However, all covariates may not be relevant for the prediction task and often the scientific question is to identify a subset of the covariates that are associated with the target variable. For model selection, we use two cross-validation variants and Bayesian bootstrap as described below.

2.7.1 Leave-one-out cross-validation

We use leave-one-out cross-validation (LOOCV) to compare the models when a continuous covariate such as *age*, *diseaseAge* or *season* is added to a model. In this case, a single time point of an individual is left out as test data and the rest are kept as training data. We use MCMC to infer the parameters of a given model and calculate the following leave-one-out predictive density:

$$p(y_i|\boldsymbol{y}_{-i}, X, M) = \int p(y_i|\boldsymbol{\Theta}, X, M) p(\boldsymbol{\Theta}|\boldsymbol{y}_{-i}, X, M) d\boldsymbol{\Theta} \tag{24}$$

where $\boldsymbol{y}_{-i} = \boldsymbol{y} \setminus y_i$ and $\boldsymbol{\Theta}$ are the parameters of the GP model M. This can be calculated by setting $\boldsymbol{f}^* \leftarrow y_i$, $X^* \leftarrow \boldsymbol{x}_i$, $\boldsymbol{y} \leftarrow \boldsymbol{y}_{-i}$ and $X \leftarrow X \setminus \boldsymbol{x}_i$ in Eq. (18). The standard LOOCV would require us to run the inference N times, which is time consuming when N is large. In practice, we use importance sampling to sample $p(\boldsymbol{\Theta}|\boldsymbol{y}_{-i}, X, M)$ where the posterior $p(\boldsymbol{\Theta}|\boldsymbol{y}, X, M)$ of the full data $\boldsymbol{y}$ is used as the proposal distribution. We thus approximate Eq. (24) as

$$\begin{aligned} p(y_i|\boldsymbol{y}_{-i}) &= \int \frac{p(y_i|\boldsymbol{\Theta}) p(\boldsymbol{\Theta}|\boldsymbol{y}_{-i})}{p(\boldsymbol{\Theta}|\boldsymbol{y})} p(\boldsymbol{\Theta}|\boldsymbol{y}) d\boldsymbol{\Theta} \\ &\approx \sum_{s=1}^{S} \frac{p(y_i|\boldsymbol{\Theta}_s) p(\boldsymbol{\Theta}_s|\boldsymbol{y}_{-i})}{p(\boldsymbol{\Theta}_s|\boldsymbol{y})} \\ &\approx \frac{1}{\sum_{s=1}^{S} \frac{1}{p(y_i|\boldsymbol{\Theta}_s)}} \end{aligned} \tag{25}$$

where we have omitted X and M in the notation for simplicity and $\boldsymbol{\Theta}_s$ is a MCMC sample from the full posterior $p(\boldsymbol{\Theta}|\boldsymbol{y})$. However, directly applying Eq. (25) usually results in high variance and is not recommended. We use a recently developed Pareto smoothed importance sampling to control the variance by smoothing the importance ratios $p(\boldsymbol{\Theta}_s|\boldsymbol{y}_{-i})/p(\boldsymbol{\Theta}_s|\boldsymbol{y})$ (for details, see (Vehtari *et al.*, 2017, 2016)).

The importance sampling phase is fast and it is shown to be accurate (Vehtari *et al.*, 2017). Therefore, we only need to run MCMC inference once for the full training data. Once the leave-one-out predictive probabilities in Eq. (24) are obtained for all the data points, the GP models are compared using Bayesian bootstrap described in Sec. 2.7.3.

2.7.2 Stratified cross-validation

In stratified cross-validation (SCV), we leave out all time points of an individual as test data and use the rest as training data. SCV is used when a categorical/binary covariate, such as *group* or *gender*, is added to the model. Let $\boldsymbol{y_i}$ denote all measured time points corresponding to an individual i ($X_{\boldsymbol{i}}$ is defined similarly) and $\boldsymbol{y}_{-\boldsymbol{i}} = \boldsymbol{y} \setminus \boldsymbol{y_i}$. Similar to LOOCV, we want to compute the predictive density of the test data points $\boldsymbol{y_i}$

$$p(\boldsymbol{y_i}|\boldsymbol{y_{-i}}, X, M) = \int p(\boldsymbol{y_i}|\boldsymbol{\Theta}, X, M)p(\boldsymbol{\Theta}|\boldsymbol{y_{-i}}, X, M)d\boldsymbol{\Theta}. \tag{26}$$

This can be calculated by setting $\boldsymbol{f}^* \leftarrow \boldsymbol{y_i}$, $X^* \leftarrow X_{\boldsymbol{i}}$, $\boldsymbol{y} \leftarrow \boldsymbol{y_{-i}}$ and $X \leftarrow X_{\boldsymbol{-i}}$ in Eq. (21). Since importance sampling does not work well in this case, we apply the CCD inference P times (once for each individual). Also, we use CCD with SCV as it is much faster than MCMC.

2.7.3 Model comparison using Bayesian bootstrap

After obtaining the leave-one-out predictive densities (Eq. (24) or (26)) for a collection of models, we use Bayesian bootstrap to compare the involved models. Let us start with a simple case where two models M_1 and M_2 are compared. In the LOOCV setting, we compare the models by computing the average difference of their log-predictive densities

$$\frac{1}{N}\sum_{i=1}^{N}\left(\log(p(y_i|\boldsymbol{y}_{-i}, X, M_1)) - \log(p(y_i|\boldsymbol{y}_{-i}, X, M_2))\right), \tag{27}$$

which measures the difference of the average prediction accuracy of the two models. If Eq. (27) is greater than 0, then model M_1 is better than M_2, otherwise model M_2 is better than M_1.

Comparison in Eq. (27) does not provide a probabilistic quantification of how much better one model is compared to the other. We thus approximate the relative probability of a model being better than another model using Bayesian bootstrap (Rubin, 1981), which assumes y_i only takes values from the observations $\boldsymbol{y} = (y_1, y_2, ...y_N)^T$ and has zero probability at all other values. In Bayesian bootstrap, the probabilities of the observation values follow the N-dimensional Dirichlet distribution $\mathrm{Dir}(1, 1, ..., 1)$. More specifically, we bootstrap the samples N_B times ($b = 1, \ldots, N_B$) and each time we get the same N observations $\boldsymbol{y}$, with each observation taking weight w_{bi} ($i = 1, \ldots, N$) from the N-dimensional Dirichlet distribution. The N_B bootstrap samples are then summarised to obtain the probability of M_1 being better than M_2

$$\frac{1}{N_B}\sum_{b=1}^{N_B}\delta\left\{\frac{1}{N}\sum_{i=1}^{N} w_{bi}\log\left(\frac{p(y_i|\boldsymbol{y}_{-i}, X, M_1)}{p(y_i|\boldsymbol{y}_{-i}, X, M_2)}\right)\right\}, \tag{28}$$

where $\delta\{\cdot\}$ is the Heaviside step function and w_{bi} is the bootstrap weight for the ith data point in the bth bootstrap iteration (see Vehtari *et al.* (2017) for more details). We call the result of Eq. (28) LOOCV factor (LOOCVF).

The above strategy also works when comparing multiple models. Instead of calculating the heaviside step function in the bth bootstrap iteration, we simply choose the model with the highest rank by sorting the models using

$$\frac{1}{N}\sum_{i=1}^{N} w_{bi}(\log(p(y_i|\boldsymbol{y}_{-i}, X, M_m)), \tag{29}$$

where m indices the model. In the end, we count the occurrences N_m of each model being the best across all N_B bootstrap samples and we compute the posterior probability of model M_m as N_m/N_B, which we term as the posterior rank probability.

For SCV, we replace y_i with $\boldsymbol{y_i}$ and $\boldsymbol{y}_{-i}$ with $\boldsymbol{y_{-i}}$ in Eqs. (27-28) and follow the same procedure as above to compare the models. Eq. (28) is then termed as the SCV factor (SCVF). In practice, we set the threshold of the LOOCVF to be 0.8 and SCVF to be 0.95, i.e., the LOOCVF (resp. SCVF) of the extended model versus the original model needs to be larger than 0.8 (resp. 0.95) for a continuous covariate (resp. binary covariate) to be added.

Although Eq. (29) can be used to compare any subset of models, complex models will dominate the posterior rank probability when compared together with simpler models. Hence, `LonGP` only uses it to compare candidate models of similar complexity (see next Section and Suppl. Sec. 3).

2.8 Step-wise additive GP regression algorithm

The space of all models is large and thus an exhaustive search for the best model over the whole model space would be too slow in practice. Two commonly used model (or feature) selection methods include forward and backward search techniques. Starting with the most complex model, as in the backward search approach, is not practical in our case, so we propose to use a greedy forward search approach similar to step-wise linear regression model building. That is, we start from the base model that only includes the *id* covariate. Then we add continuous covariates to the model sequentially

Table 1. Model inference results for simulated data with 20 cases and 20 controls, noise variance $\sigma_\epsilon^2 = 3$ and samples taken every 3 months. Rows show the number of times each model is inferred as the best model out of 100 Monte Carlo simulations for each generating model. 'Others' corresponds to all the other 11 possible APGM models. The last two columns show the number of times the *diseaseAge* covariate has or has not been included in the final model

Generated \ Predicted	AGPM1	AGPM2	AGPM3	AGPM4	AGPM5	Others	*diseaseAge* included	*diseaseAge* not included
AGPM1	**98**	2	0	0	0	0	0	100
AGPM2	0	**95**	2	1	0	2	1	99
AGPM3	0	0	**95**	0	0	5	0	100
AGPM4	0	3	0	**92**	3	2	97	3
AGPM5	0	0	3	8	**88**	1	97	3

until the model cannot be further improved. During each iteration, we first identify the covariate that improves the model the most (Eq. (29)) and test if the LOOCVF of a new proposed model versus the current model exceeds the threshold of 0.8 (Eq. (28)). While including a continuous covariate, we also include relevant interaction terms (allowed interaction terms defined by the user). After adding continuous covariates, we add discrete (categorical or binary) covariates sequentially to the model until it cannot be further improved. As with continuous covariates, during each iteration, we first identify the discrete covariate that improves the model the most and test if the SCVF of a new proposed model versus the current model exceeds the threshold of 0.95. While including a discrete covariate, we also include relevant interaction terms (allowed interactions specified by user). Details of our forward search algorithm are given in Suppl. Sec. 3 together with a pseudo-algorithm description. We note that although step-wise model selection strategies are commonly used with essentially all modelling frameworks, they have the danger of overfitting a given data. To avoid overfitting, we implement our search algorithm such that an additional component is added to the current model only if the more complex model improves the model fit significantly, as measured by the LOOCVF and SCVF.

Once all the covariates have been added, the kernel parameters of the final model are sampled using MCMC and kernel-specific predictions on the training data X are computed using Eq. (18). Additionally, a user can choose to exclude kernels that have a small effect size as measured by the fraction of total variance explained. we require component specific variances to be at least 1%. The software is implemented using features from the GPStuff package (Vanhatalo *et al.*, 2013) and implementation is discussed in Suppl. Sec. 4.

3 Results

We tested `LonGP` on simulated datasets and two real datasets including longitudinal metagenomics (Vatanen *et al.*, 2016) and proteomics datasets (Liu *et al.*, 2018).

3.1 Simulated datasets

We first carried out a large simulation study to test and demonstrate `LonGP`'s ability to correctly infer associations between covariates and target variables from longitudinal data. Here we are primarily interested in answering two questions: is `LonGP` able to select the correct model as well as the correct covariates that were used to generate the data, and can we detect disease associated signals. We

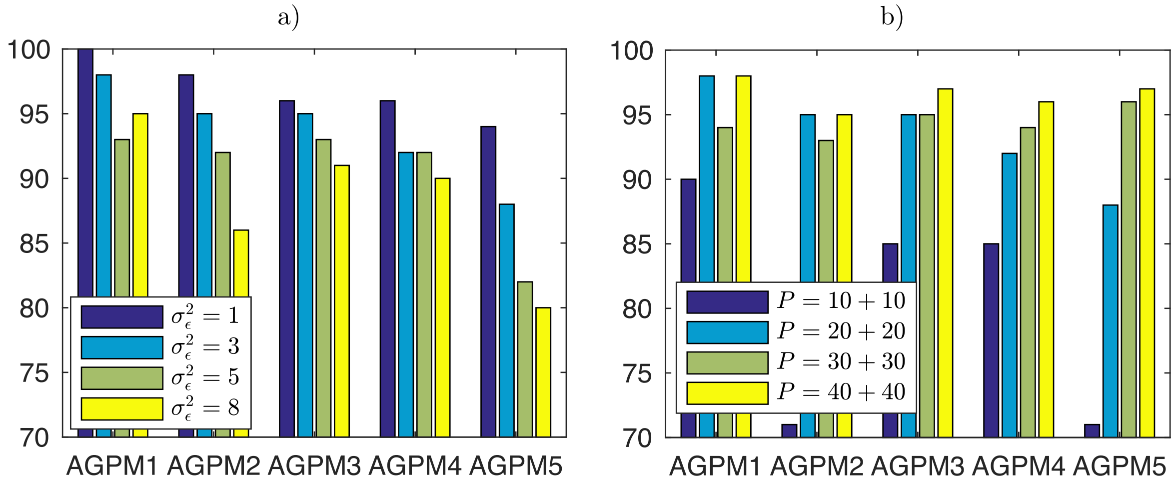

Figure 2: a) Model selection accuracy as a function of noise variance. b) Model selection accuracy as a function of sample size. y-axis shows the number of times the correct model is inferred as the best model out of 100 Monte Carlo simulations.

simulated -omics datasets from five different generating additive GP models (AGPM):

$$\begin{aligned}
\text{AGPM1: } y &= f_{\text{ca}}^{(1)}(id) + \epsilon \\
\text{AGPM2: } y &= f_{\text{ca}}^{(1)}(id) + f_{\text{se}}^{(2)}(age) + f_{\text{ca}\times\text{se}}^{(3)}(id \times age) + \epsilon \\
\text{AGPM3: } y &= f_{\text{ca}}^{(1)}(id) + f_{\text{se}}^{(2)}(age) + f_{\text{ca}\times\text{se}}^{(3)}(id \times age) + \\
&\quad f_{\text{bi}}^{(4)}(loc) + f_{\text{bi}\times\text{se}}^{(5)}(loc \times age) + \epsilon \\
\text{AGPM4: } y &= f_{\text{ca}}^{(1)}(id) + f_{\text{se}}^{(2)}(age) + f_{\text{ca}\times\text{se}}^{(3)}(id \times age) + \\
&\quad f_{\text{ns}}^{(4)}(diseaseAge) + \epsilon \\
\text{AGPM5: } y &= f_{\text{ca}}^{(1)}(id) + f_{\text{se}}^{(2)}(age) + f_{\text{ca}\times\text{se}}^{(3)}(id \times age) + \\
&\quad f_{\text{bi}}^{(4)}(loc) + f_{\text{bi}\times\text{se}}^{(5)}(loc \times age) + \\
&\quad f_{\text{ns}}^{(6)}(diseaseAge) + \epsilon
\end{aligned}$$

To set up our simulation scenario, we first use 20 cases and 20 controls (i.e., $P = 40$) specified by the *group* covariate, each with $n_i = 13$ data points ranging from 0 month to 36 months with an increment of three months, thus specifying the *age* covariate. Other covariates are randomly simulated using the following rules. The disease occurrence time is sampled uniformly from 0 to 36 months for each case subject and *diseaseAge* is computed accordingly. We make the effect of *diseaseAge* non-stationary by transforming it with the sigmoid function from Eq. (15), such that majority of changes occur in the range of -12 to +12 months. The *location* and *gender* are i.i.d. sampled from a Bernoulli distribution with $p = 0.5$ for each individual, where *gender* acts as an irrelevant covariate. The continuous covariates are subjected to standardisation after being generated, such that the mean of each covariate is 0 and standard deviation is 1. We then use the kernels described in Sec. 2.4, where the length-scales for continuous (standardised) covariates are set to 1 for the shared components and 0.8 for the interaction components. We set the variances of each shared component to 4 and noise to 3, i.e., $\sigma^2_{\text{age}} = \sigma^2_{\text{diseaseAge}} = \sigma^2_{\text{loc}} = \sigma^2_{\text{id}} = 4$ and $\sigma^2_\epsilon = 3$. With these specifications, we generate 100 datasets for each AGPM. A randomly generated longitudinal data set from AGPM5 is visualised in Fig. 1 (Note the order of latent functions is changed for better visualisation.).

In the inference, all covariates including *gender* are used, which means that there are $2^4 = 16$ candidate models to be selected. Interaction terms are allowed for all covariates except for *diseaseAge*. Table 1 shows the distribution of selected models for each generating additive GP model, with the numbers in bold font indicating correctly identified models. Table 1 shows that `LonGP` can achieve between 88 and 98% accuracy in inferring the correct model with these parameter settings. Results in Table 1 also shows that it becomes more challenging to identify the correct model as the generating model becomes more complex, which is expected. `LonGP` can accurately detect the disease related signal as well since the *diseaseAge* covariate is included in the final model in 97% of the simulation

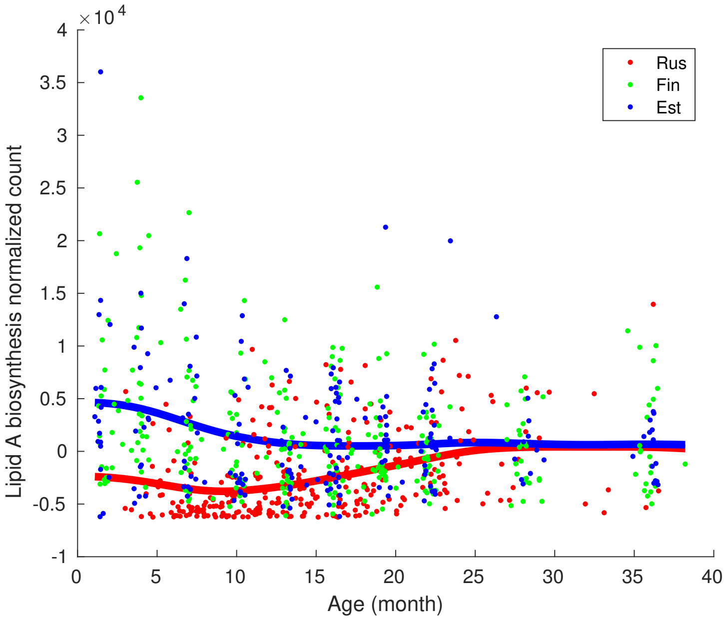

Figure 3: LonGP regression results for "Lipid A biosynthesis" pathway. Normalized read counts of Russian, Finnish and Estonian infant samples are colored by red, green and blue dots, respectively. The blue line shows the nonlinear age trend for Finnish and Estonian infants. The red line shows the age trend of Russian infants. The red and blue lines are generated as the sum of components $y = f_{\text{se}}^{(1)}(age) + f_{\text{bi}}^{(3)}(rus) + f_{\text{bi}\times\text{se}}^{(5)}(rus \times age)$.

runs for both AGPM4 and AGPM5 models (see Table 1). Moreover, `LonGP` is notably specific in detecting the *diseaseAge* covariate as the percentage of false positives is only 0%, 1%, and 0% for AGPM1, AGPM2, and AGPM3, respectively (see Table 1).

To better characterise `LonGP`'s performance in different scenarios, we tested how the amount of additive noise affects the results. We varied the noise variance as $\sigma_\epsilon^2 \in \{1, 3, 5, 8\}$ and kept all other settings unchanged, effectively changing the signal to noise ratio, or the effect size relative to the noise level. Fig. 2a) shows that the model selection accuracy increases consistently as the noise variance decreases. We next tested how the number of study subjects (i.e., the sample size P) affects the inference results. We set the number of case-control pairs to $\{(10, 10), (20, 20), (30, 30), (40, 40)\}$ and keep all other settings unchanged. As expected, Fig. 2b) shows how `LonGP`'s model selection accuracy increases as the sample size increases. Similarly, `LonGP` maintains its high sensitivity and specificity in detecting *diseaseAge* covariate across the additive noise variances and samples sizes considered here (see Suppl. Tables 5 and 6).

Finally, we also quantify how the sampling interval (i.e., the number of time points per individual) affects the inference results. We varied the sampling intervals as $\{2, 3, 4, 6\}$ (months) corresponding to $n_i \in \{19, 13, 10, 7\}$ time points for each individual and kept all other simulation settings unchanged. Suppl. Table 3 shows that again the model selection accuracy changes consistently with the number of measurement time points. Suppl. Table 7 shows that changing the sampling interval has a small but systematic effect on the sensitivity and specificity of detecting the *diseaseAge* covariate.

Overall, our results suggest that we can accurately infer the correct model structure and also detect a relatively weak disease related signal with as few as 10 case-control pairs and notable noise variance. Moreover, the model selection accuracy increases as the number of individuals (biological replicates), the number of time points and signal to noise ratio increases.

3.2 Longitudinal metagenomics dataset

We used `LonGP` to analyse a longitudinal metagenomics dataset (Vatanen *et al.*, 2016). In this dataset, 222 children from Estonia, Finland and Russia were followed from birth until the age of three with collection of monthly stool samples which were subsequently analysed by metagenomic sequencing. The aim of this study was to characterise the developing gut microbiome in infants from countries with different socioeconomic status and to determine the key factors affecting the early gut

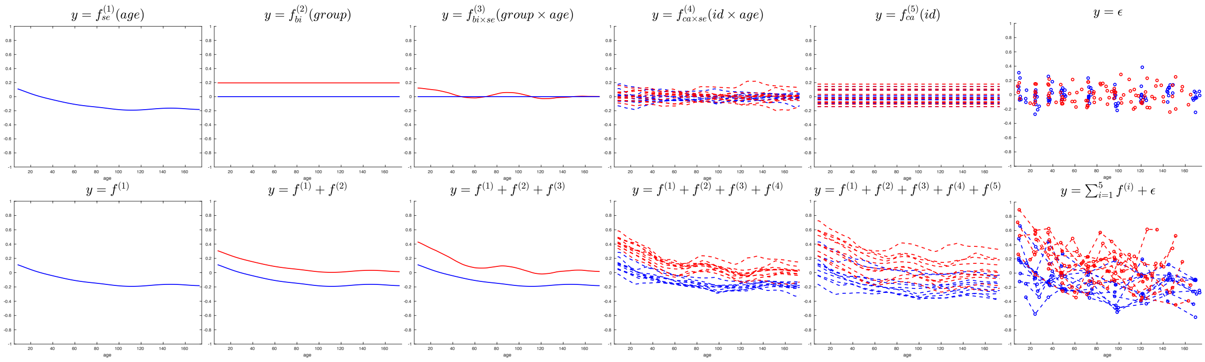

Figure 4: Predicted components and cumulative effect for protein Q7LGC8. Top panel shows contributions of individual components and lower panel shows cumulative effects. Red lines are cases and blue lines are controls. Bottom right panel shows the (centered) data.

microbiome development. Here we model the microbial pathway profiles quantifying the functional potential of the metagenomic communities. There are in total $N = 785$ metagenomic samples. We require a pathway to be detected in at least 500 samples to be included in our `LonGP` analysis, which results in 394 valid microbial pathways. Let c_{ij} denote the number of reads mapping to genes in the jth ($j = 1, \ldots, 394$) pathway in sample i ($i = 1, \ldots, 785$) and C_i is the total number of sequencing reads for sample i. The target variable is defined by $c_{ij}/C_i \cdot \text{median}(C_1, C_2, ..., C_N)$.

We selected the following 7 covariates for our additive GP regression based on their known interaction with the gut microbiome: *age*, *bfo*, *caesarean*, *est*, *fin*, *rus* and *id*. *bfo* indicates whether an infant was breastfed at the time of sample collection; *caesarean* indicates if an infant was born by Caesarean section; *est*, *fin* and *rus* are binary covariates indicating the home country of the study subjects (Estonia, Finland and Russia, respectively). We use SE kernel for *age* and *bfo*, categorical kernel for *id*, and binary kernel for *caesarean*, *est*, *fin*, and *rus*. Interactions are allowed for all covariates except for *bfo*.

We applied `LonGP` to analyse each microbial pathway as a target variable separately and inferred the covariates for each target variable as described above. The selected models and explained variances of the components for all 394 pathways are available in Suppl. File 1. A key discovery in Vatanen et al. (Vatanen *et al.*, 2016) was that "Lipid A biosynthesis" pathway was significantly enriched in the gut microbiomes of Finnish children compared to Russian children. Our analysis confirmed the linear model based analysis in (Vatanen *et al.*, 2016) by selecting the following model for "Lipid A biosynthesis" pathway: $y = f^{(1)}_{\text{se}}(age) + f^{(2)}_{\text{se}}(bfo) + f^{(3)}_{\text{bi}}(rus) + f^{(4)}_{\text{ca}}(id) + f^{(5)}_{\text{bi}\times\text{se}}(rus \times age) + f^{(6)}_{\text{bi}\times\text{se}}(id \times age) + \epsilon$, which shows the difference between the Russian and Finnish study groups. Explained variance of *bfo* was 0.2% and *bfo* was thus excluded from the final model. Fig. 3 shows the normalized "Lipid A biosynthesis" data together with the additive GP predictions using kernels $y = f^{(1)}_{\text{se}}(age) + f^{(3)}_{\text{bi}}(rus) + f^{(5)}_{\text{bi}\times\text{se}}(rus \times age)$. The obtained model fit is similar to that reported in (Vatanen *et al.*, 2016) with an exception that the apparent non-linearity is captured by the additive GP model but otherwise the new model conveys the same information. Our analysis also identified many novel pathways with differences between Finnish, Estonian and Russian microbiomes, reported in Suppl. File 1.

3.3 Longitudinal proteomics dataset

We next analysed a longitudinal proteomics dataset from a type 1 diabetes (T1D) study (Liu *et al.*, 2018). Liu et al. measured the intensities of more than 2000 proteins from plasma samples of 11 T1D patients and 10 healthy controls which were collected at 9 time points, resulting in a total of 189 samples. Detection of T1D associated auto-antibodies in the blood is currently held as the best early marker that predict the future development of T1D, and most of the individuals turning positive for multiple T1D auto-antibodies will later on develop the clinical disease. The disease event of interest is called seroconversion, which is the first time point when T1D-specific antibodies are detected in blood. Identifying early markers for T1D that would be detected even before the auto-antibodies is a grand challenge. It would allow early disease prediction and possibly even intervention.

Liu et al. used a linear mixed model with quadratic terms to detect proteins that behave differently between cases and controls. However, they did not model changes near the seroconversion in their

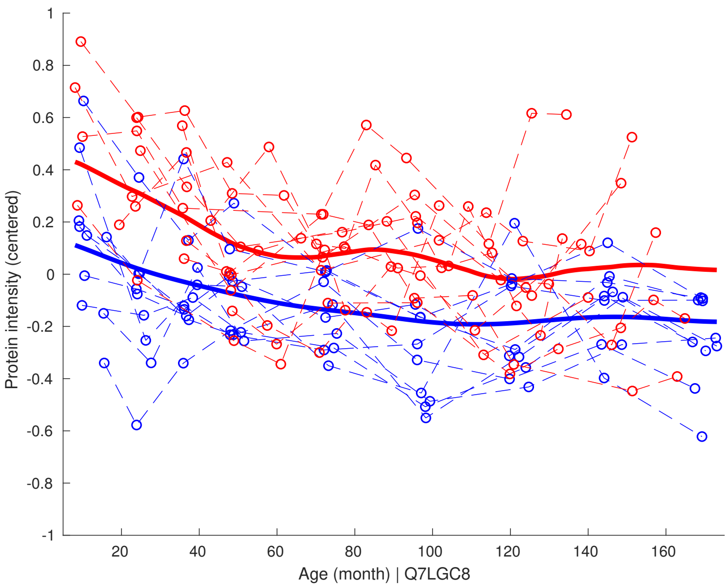

Figure 5: Cumulative effect $y = f_{\text{se}}^{(1)}(age) + f_{\text{bi}}^{(2)}(group) + f_{\text{bi}\times\text{se}}^{(3)}(group \times age)$ against real (centered) intensity of protein Q7LGC8. Red lines are cases and blue lines are controls.

model and only regressed on age. We use `LonGP` to re-analyse this longitudinal proteomics dataset (Liu *et al.*, 2018) and try to find additional proteins with differing plasma expression profiles between cases and controls in general as well as focusing on samples collected close to seroconversion. The modelling is done with the following covariates: *age*, *sero* (measurement time minus seroconversion time), *group* (case or control), *gender*, and *id*. 1538 proteins with less than 50% missing values are kept for further analysis. We follow the same preprocessing steps as described in (Liu *et al.*, 2018) to get the normalised protein intensities. We use SE kernel for *age*, input warped non-stationary SE kernel for *sero*, binary kernel for *group* as well as for *gender*, and categorical kernel for *id*. Interactions are allowed for all covariates except for *sero*. The selected models and explained variances of each component for all 1538 proteins are reported in Suppl. File 2.

We detected 38 proteins that are associated with the *group* covariate. Protein with Uniprot ID Q7LGC8 shows a group difference (the protein level of cases are higher than controls) and the selected model is $y = f_{\text{se}}^{(1)}(age) + f_{\text{bi}}^{(2)}(group) + f_{\text{bi}\times\text{se}}^{(3)}(group \times age) + f_{\text{ca}\times\text{se}}^{(4)}(id \times age) + f_{\text{ca}}^{(5)}(id) + \epsilon$. Fig. 4 shows the contribution of each component and the cumulative effects. Fig. 5 shows the cumulative effect $y = f_{\text{se}}^{(1)}(age) + f_{\text{bi}}^{(2)}(group) + f_{\text{bi}\times\text{se}}^{(3)}(group \times age)$ against the real protein intensity to better visualise the predicted group difference.

We detected 30 proteins that are associated with the *sero* covariate. We visualise two of those proteins (Uniprot IDs: P07602, Q14982) that show a signal near seroconversion time point. For both proteins `LonGP` detects model $y = f_{\text{se}}^{(1)}(age) + f_{\text{ca}\times\text{se}}^{(2)}(id \times age) + f_{\text{ca}}^{(3)}(id) + f_{\text{ns}}^{(4)}(sero) + \epsilon$. Fig. 6 shows the contribution of the *sero* component together with the real (centered) protein intensities as a function of seroconversion age for protein P07602. The *sero* component increases and then stablises at a higher baseline after seroconversion in the cases. This is shown by the lower baseline of cases before seroconversion and higher baselines after seroconversion. Suppl. Fig. 5 shows the predicted mean of each component as well as the cumulative effects for protein P07602. Suppl. Fig. 6 shows a different type of *sero* effect for protein Q14982 where a temporary increase of the protein intensity near the seroconversion event is observed in many T1D patients, in contrast to the slowly decreasing age trend. Suppl. Fig. 7 shows the predicted individual components and the cumulative effects for protein Q14982.

4 Discussion and Conclusions

General linear mixed effect model is a simple yet powerful modelling framework that has been widely accepted in biomedical literature. Still, applications of linear models can be challenging, especially when the underlying data generating mechanisms contain unknown nonlinear effects and correlation structures or non-stationary signals.

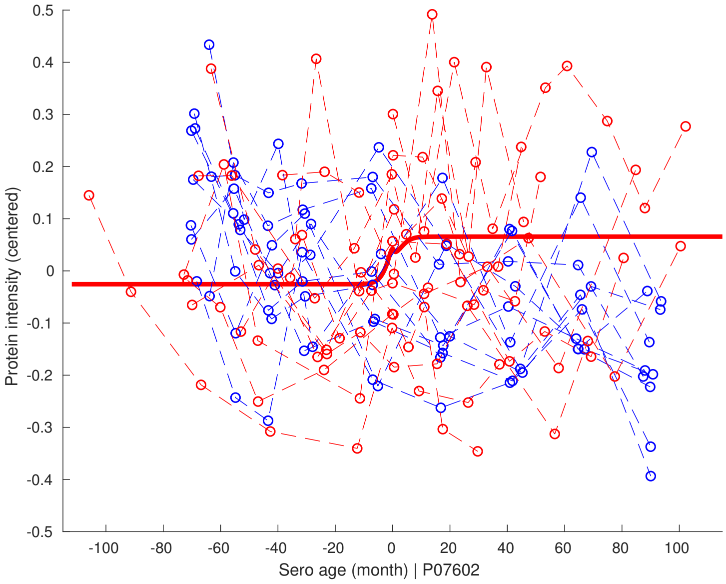

Figure 6: Predicted mean of the *sero* component for protein P07602. The dashed red lines show the measurements of cases and the dashed blue lines are controls. x-axis is seroconversion age and y-axis is centered protein intensity. Mean seroconversion age of all cases (79.42 month) is used as the seroconversion age for controls. The solid red line corresponds to the mean of the seroconversion component $y = f_{\text{ns}}^{(4)}(sero)$.

Here we have described `LonGP`, a non-parametric additive Gaussian process model for longitudinal data analysis, which we demonstrate to solve many of the commonly faced modelling challenges. As `LonGP` builds on GP regression, it can automatically handle irregular sampling time points and time-varying covariates. Missing values are also easily accounted for via binary mask kernels without any extra effort. More generally, `LonGP` provides a flexible framework to choose appropriate covariance structures for the correlated outcomes via the GP kernel functions, and the chosen kernels are properly adjusted to given data by carrying out Bayesian inference for the kernel parameters. Gaussian processes are known to be capable of approximating any continuous function. Thus, `LonGP` is applicable to any longitudinal data set. Furthermore, incorporating non-stationary kernels into the kernel mixture easily adapts `LonGP` for non-stationary signals. Finally, `LonGP` is equipped with an advanced Bayesian predictive inference method that utilises several recent, state-of-the-art techniques which make model inference accurate and improves running time especially for larger data sizes and more complex models.

Compared with traditional linear regression methods, `LonGP` is helpful in finding relatively weak signals that have an arbitrary shape. For protein P07602 in the longitudinal proteomics dataset (Liu *et al.*, 2018), the dominant factor is *age* (explained variance 25%) and the disease related effect *sero* (explained variance 5.5%) is a minor factor, as shown in Suppl. Fig. 5. Revealing such disease related effects is essential in understanding mechanisms of disease progression and uncovering biomarkers for diagnostic purposes. The seroconversion associated proteins revealed by our study provide a list of candidate proteins for further analysis with a more extensive sample size using, for example, targeted proteomics approaches. Similarly, in the longitudinal metagenomics dataset (Vatanen *et al.*, 2016), we also observe non-linear effects for many of the covariates, some of which warrant further experimental studies.

Overall, supported by our results, we believe `LonGP` can be a valuable tool in longitudinal data analysis.

Acknowledgements

We acknowledge the computational resources provided by the Aalto Science-IT and CSC-IT Center for Science, Finland.

Funding

This work has been supported by the Academy of Finland Centre of Excellence in Molecular Systems Immunology and Physiology Research 2012-2017 grant 250114; the Academy of Finland grants no. 292660, 292335, 294337, 292482, 287423; JDRF grant no. 17-2013-533, 1-SRA-2017-357-Q-R; and the Finnish Funding Agency for Innovation Tekes.

References

Duvenaud, D. K., Nickisch, H., and Rasmussen, C. E. (2011). Additive gaussian processes. In *Advances in Neural Information Processing Systems 24*.

Gibbons, R. D., Hedeker, D., and DuToit, S. (2010). Advances in analysis of longitudinal data. *Annual review of clinical psychology*, **6**, 79–107.

Heinonen, M., Mannerström, H., Rousu, J., Kaski, S., and Lähdesmäki, H. (2016). Non-stationary gaussian process regression with hamiltonian monte carlo. In *Proceedings of the 19th International Conference on Artificial Intelligence and Statistics*, JMLR: Workshop and Conference Proceedings, pages 732–740. JMLR.

Liu, C.-W., Bramer, L., Webb-Robertson, B.-J., Waugh, K., Rewers, M. J., and Zhang, Q. (2018). Temporal expression profiling of plasma proteins reveals oxidative stress in early stages of type 1 diabetes progression. *Journal of Proteomics*, **172**, 100 – 110.

Liu, J. and Coull, B. (2017). Robust hypothesis test for nonlinear effect with gaussian processes. In *Advances in Neural Information Processing Systems 30*.

Neal, R. M. (2003). Slice sampling. *The Annals of Statistics*, **31**(3), 705–741.

Qamar, S. and Tokdar, S. T. (2014). Additive Gaussian Process Regression.

Quintana, F. A., Johnson, W. O., Waetjen, E., and Gold, E. (2016). Bayesian nonparametric longitudinal data analysis. *Journal of the American Statistical Association*, **111**(515), 1168–1181.

Rasmussen, C. E. and Williams, C. K. I. (2006). *Gaussian Processes for Machine Learning*. The MIT Press.

Rubin, D. B. (1981). The Bayesian bootstrap. *The Annals of Statistics*, **9**, 130–134.

Rue, H., Martino, S., and Chopin, N. (2009). Approximate Bayesian inference for latent Gaussian models by using integrated nested Laplace approximations. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, **71**(2), 319–392.

Saul, A., Hensman, J., Vehtari, A., and Lawrence, N. (2016). *Chained Gaussian Processes*, volume 51 of *Journal of Machine Learning Research: Workshop and Conference Proceedings*, pages 1431–1440. JMLR W&CP.

Snelson, E., Ghahramani, Z., and Rasmussen, C. E. (2004). Warped gaussian processes. In *Advances in Neural Information Processing Systems 16*, pages 337–344. MIT Press.

Tolvanen, V., Jylänki, P., and Vehtari, A. (2014). Expectation propagation for nonstationary heteroscedastic gaussian process regression. In *2014 IEEE International Workshop on Machine Learning for Signal Processing (MLSP)*.

Vanhatalo, J., Pietiläinen, V., and Vehtari, A. (2010). Approximate inference for disease mapping with sparse gaussian processes. *Statistics in Medicine*, **29**(15), 1580–1607.

Vanhatalo, J., Riihimäki, J., Hartikainen, J., Jylänki, P., Tolvanen, V., and Vehtari, A. (2013). GPstuff: Bayesian modeling with Gaussian processes. *Journal of Machine Learning Research*, **14**(1), 1175–1179.

Vatanen, T., Kostic, A. D., d'Hennezel, E., Siljander, H., Franzosa, E. A., and et al. (2016). Variation in microbiome lps immunogenicity contributes to autoimmunity in humans. *Cell*, **165**(4), 842–853.

Vehtari, A., Mononen, T., Tolvanen, V., Sivula, T., and Winther, O. (2016). Bayesian leave-one-out cross-validation approximations for gaussian latent variable models. *Journal of Machine Learning Research*, **17**(103), 1–38.

Vehtari, A., Gelman, A., and Gabry, J. (2017). Practical bayesian model evaluation using leave-one-out cross-validation and waic. *Statistics and Computing*, **27**(5), 1413–1432.

Wu, H. and Zhang, J.-T. (2006). *Nonparametric Regression Methods for Longitudinal Data Analysis: Mixed-Effects Modeling Approaches*. Wiley.

LonGP: an additive Gaussian process regression model for longitudinal study designs (supplementary)

Lu Cheng, Siddharth Ramchandran, Tommi Vatanen, Niina Lietzen, Riitta Lahesmaa, Aki Vehtari and Harri Lähdesmäki

January 29, 2018

1 Supplementary figures

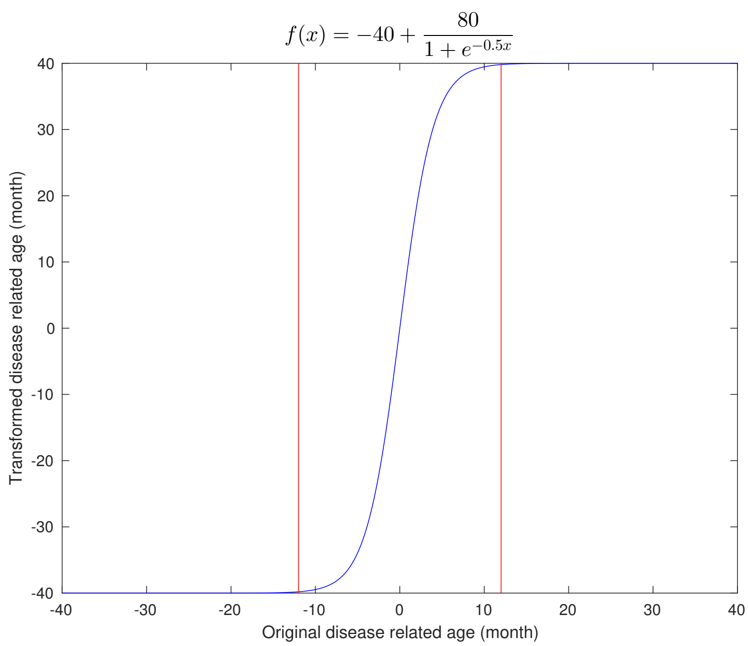

Figure 1: Non-stationary transformation. The x-axis is the original disease related age and the y-axis is the transformed disease related age. Sigmoid function $f(x) = -40 + \frac{80}{1+e^{-0.5x}}$ is used for the transformation. The red bars indicate the positions of ± 12 month.

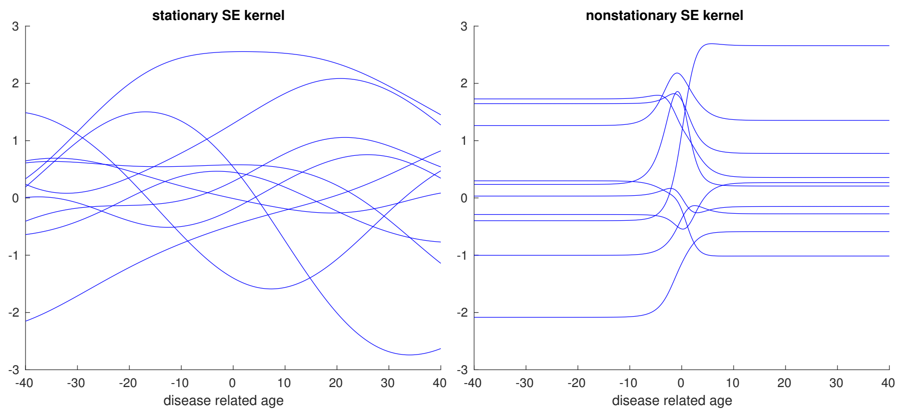

Figure 2: Functions drawn from stationary and non-stationary SE kernel. The left panel shows functions drawn form a stationary SE kernel with length-scale $l_{\mathrm{se}} = 1$ and magnitude $\sigma_{se}^2 = 1$. The right panel shows functions drawn form a non-stationary SE kernel by first applying the transformation shown in Figure 1 and then generated using the same SE kernel with scale $l_{\mathrm{se}} = 1$ and magnitude $\sigma_{se}^2 = 1$. Random functions are drawn using the standardised inputs and then transformed back to original range.

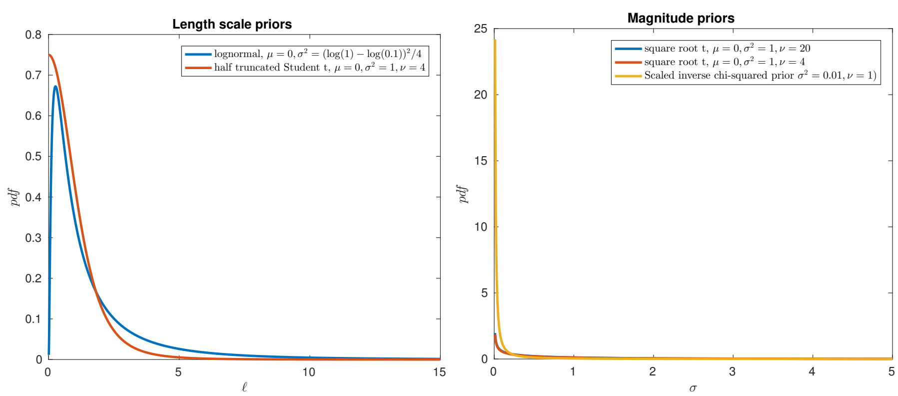

Figure 3: Priors for kernel parameter. The left panel shows priors for length-scales and the right panel shows priors for magnitude and noise variance. Note that the target variable and continuous covariates are all standardised to mean 0 and standard deviation 1.

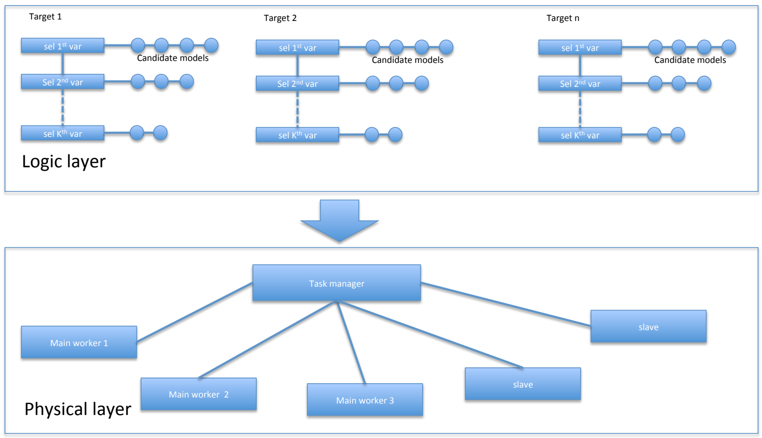

Figure 4: Software architecture. The task manager monitors the whole process and schedules the tasks. The main worker ensures the tasks for a given target is executed in the right order. The slaves run parallel jobs assigned by the task managers.

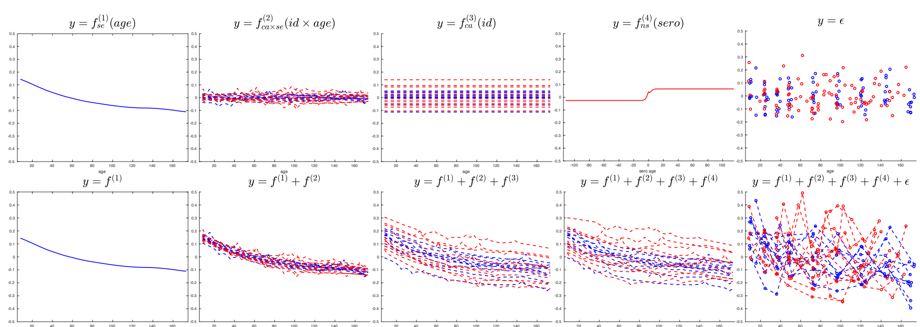

Figure 5: Predicted components and cumulative effects for protein P07602. Top panel shows contributions of individual components and lower panel shows cumulative effects. Red lines correspond to cases and blue lines correspond to controls. Bottom right panel shows the (centered) data. Note the x-axis of $f^{(4)}$ is seroconversion age.

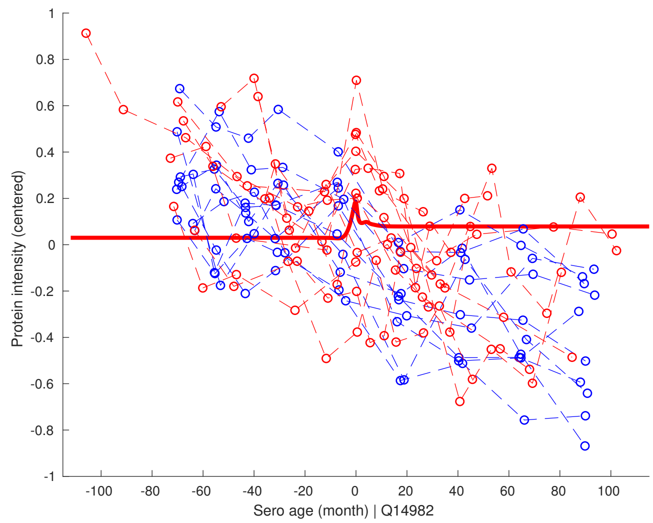

Figure 6: Predicted mean of the *sero* component for protein Q14982. The dashed red lines show the measurements of cases and the dashed blue lines are measurements of controls. x-axis is seroconversion age and y-axis is centered protein intensity. Mean seroconversion age of all cases (79.42 month) is used as the seroconversion age for controls. The solid red line corresponds to the mean of the seroconversion component $y = f_{ns}^{(4)}(sero)$.

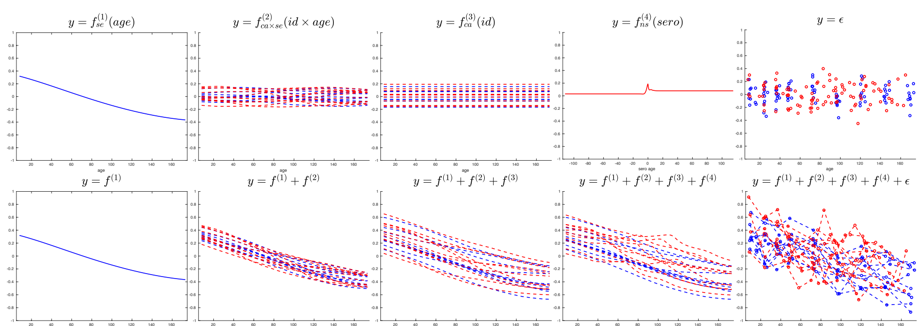

Figure 7: Predicted components and cumulative effects for protein Q14982. Top panel shows contributions of individual components and lower panel shows cumulative effects. Red lines correspond to cases and blue lines correspond to controls. Bottom right panel shows the (centered) data. Note the x-axis of $f^{(4)}$ is seroconversion age.

2 MCMC details

We start 4 independent Markov chains from different, randomly initialised initial parameter values. Then, we combine the 4 chains and check the convergence by throwing away 500 burn-in samples and thinning the remaining 2000 samples by 5. If converged, then quit; otherwise we thin the combined chain further by 2. If not converged, we repeat the process and check the convergence from the resulting combined markov chains, for at most 4 times. The potential reduction scaling factor (PRSF) [1] R is used to check the convergence by the following rules: if $R <= 1.1$, converged; if $1.1 < R <= 1.2$, does not converge well; if $R > 1.2$, does not converge.

3 LonGP algorithm

This section describes in detail how the covariate selection process works. Let us denote a given set of continuous covariates by $\mathbf{C} = (V_1, V_2, ..., V_c)$ and the binary covariates by $\mathbf{B} = (V_{c+1}, V_{c+2}, ..., V_{c+b})$, where c and b are the number of continuous and binary/categorical variables. The categorical covariate id must be included in set $\mathbf{B}$. In `LonGP`, the user needs to provide the kernel types (Sec. 2.4) for all the given covariates, as well as indicate whether interactions for each covariate is allowed. The data are automatically standardised and the parameter priors for kernels are predefined (see Sec. 2.5). For any given subset of covariates (must include id), the additive GP model is constructed by the following rules:

1. Construct a kernel for each covariate according to the given kernel type and add it to the model.

2. For each continuous covariate that allows interaction, construct product kernels with all categorical/binary covariates that also allow interactions (and that are also covariates of a given model) and add them to the model.

3. For each pair of categorical/binary covariates (excluding id) that allows interactions, construct a product kernel and add it to the model.

4. Add the noise to finalise the model.

For any covariate subset $\mathbf{V}$, we can construct a GP model GPM($\mathbf{V}$) according to these four steps. The covariates are then selected by the following algorithm:

Algorithm 1: Stepwise GP regression algorithm

Result: A GP model

Set the current selected covariate set to $\mathbf{V}_{\text{curr}} = \{id\}$ and the current model to GPM($\mathbf{V}_{\text{curr}}$), infer the parameters using MCMC and perform LOOCV ;

for $i \leftarrow 1$ **to** c **do**

  foreach $V_j \in \mathbf{C} \setminus \mathbf{V}_{curr}$ **do**

    Add V_j and build a candidate model GPM($\mathbf{V}_{\text{curr}} \cup V_j$), run MCMC and perform LOOCV ;

  end

  Compare all the generated candidate models (Section 2.7.3) and choose the best model GPM($\mathbf{V}_{\text{curr}} \cup V_{\text{best}}$) ;

  Calculate LOOCVF of GPM($\mathbf{V}_{\text{curr}} \cup V_{\text{best}}$) versus GPM($\mathbf{V}_{\text{curr}}$) ;

  if *LOOCVF* $\geq$ *0.8* **then**

    Set $\mathbf{V}_{\text{curr}} = \mathbf{V}_{\text{curr}} \cup V_{\text{best}}$, update the current model accordingly ;

  else

    break ;

  end

end

Perform SCV on the current model ;

for $i \leftarrow 1$ **to** b **do**

  foreach $V_j \in \mathbf{B} \setminus \mathbf{V}_{curr}$ **do**

    Add V_j and build a candidate model GPM($\mathbf{V}_{\text{curr}} \cup V_j$), run MCMC and perform SCV ;

  end

  Compare all the generated candidate models (Section 2.7.3) and choose the best model GPM($\mathbf{V}_{\text{curr}} \cup V_{\text{best}}$) ;

  Calculate SCVF of GPM($\mathbf{V}_{\text{curr}} \cup V_{\text{best}}$) versus GPM($\mathbf{V}_{\text{curr}}$) ;

  if *SCVF* $\geq$ *0.95* **then**

    Set $\mathbf{V}_{\text{curr}} = \mathbf{V}_{\text{curr}} \cup V_{\text{best}}$, update the current model accordingly ;

  else

    break ;

  end

end

Make the current model the final model and run MCMC inference. ;

Make predictions using each component (kernel) on the training data, calculate the variances. ;

Calculate the explained variance (variances divided by the sum) of each component, delete components that have lower variances than a user defined threshold ;

The algorithm tries to select covariates with reasonably large effects and the thresholds of the LOOCVF and SCVF are determined by the user (defaults are 0.8 and 0.95).

4 Software architecture

In many occasions more than one target variable is measured, such as in transcriptome studies using microarrays or RNA-sequencing, which means that we need to run `LonGP` for many target variables at the same time. Fortunately, several parts of our method can be efficiently parallelised. We designed the `LonGP` software so that it can be easily deployed and parallelised in a modern computing cluster with shared storage, as shown in Fig. 4. Briefly, there are three types of nodes in the physical layer. The task manager monitors the whole process and assigns different tasks to the main workers and slaves. The main workers focus on one target variable and ensure that the tasks are executed in the right order. It also informs the task manager about the parallel tasks that are available. The slaves run parallel tasks assigned by the task manager. When a main worker finishes its job, it will turn into a slave node.

5 Tables for simulation experiments

Table 1. Model selection accuracy as a function of noise variance. Table shows the number of times the correct model is identified among 100 Monte Carlo simulations.

Generated Datasets	noise = 1	noise = 3	noise = 5	noise = 8
AGPM1	100	98	93	95
AGPM2	98	95	92	86
AGPM3	96	95	93	91
AGPM4	96	92	92	90
AGPM5	94	88	82	80

Table 2. Model selection accuracy as a function of sample size. Table shows the number of times the correct model is identified among 100 Monte Carlo simulations.

Generated Datasets	10 cases and 10 controls	20 cases and 20 controls	30 cases and 30 controls	40 cases and 40 controls
AGPM1	90	98	94	98
AGPM2	71	95	93	95
AGPM3	85	95	95	97
AGPM4	85	92	94	96
AGPM5	71	88	96	97

Table 3. Model selection accuracy as a function of sampling time points. Table shows the number of times the correct model is identified among 100 Monte Carlo simulations.

Generated Datasets	2 months	3 months	4 months	6 months
AGPM1	97	98	94	96
AGPM2	95	95	88	85
AGPM3	97	95	91	93
AGPM4	96	92	86	86
AGPM5	94	88	87	86

Table 4. Inclusion of *diseaseAge* in the final model for simulated data with 20 cases and 20 controls, noise variance $\sigma_\epsilon^2 = 3$ and samples taken every 3 months. Table shows the number of times the *diseaseAge* covariate is included in the inferred model among 100 Monte Carlo simulations.

Generated Datasets	*diseaseAge* detected	*diseaseAge* not detected
AGPM1	0	100
AGPM2	1	99
AGPM3	0	100
AGPM4	97	3
AGPM5	97	3

Table 5. Inclusion of *diseaseAge* in the final model as a function of noise variance. Table shows the number of times the *diseaseAge* covariate is included in the inferred model among 100 Monte Carlo simulations.

Generated Datasets	noise = 1	noise = 3	noise = 5	noise = 8
AGPM1	0	0	5	0
AGPM2	0	1	0	2
AGPM3	0	0	1	2
AGPM4	98	97	98	97
AGPM5	99	97	94	92

Table 6. Inclusion of *diseaseAge* in the final model as a function of sample size. Table shows the number of times the *diseaseAge* covariate is included in the inferred model among 100 Monte Carlo simulations.

Generated Datasets	10 cases and 10 controls	20 cases and 20 controls	30 cases and 30 controls	40 cases and 40 controls
AGPM1	4	0	0	0
AGPM2	0	1	0	5
AGPM3	0	0	0	0
AGPM4	94	97	99	96
AGPM5	93	97	100	100

Table 7. Inclusion of *diseaseAge* in the final model as a function of sampling time points. Table shows the number of times the *diseaseAge* covariate is included in the inferred model among 100 Monte Carlo simulations.

Generated Datasets	2 months	3 months	4 months	6 months
AGPM1	0	0	0	0
AGPM2	0	1	3	4
AGPM3	0	0	1	1
AGPM4	100	97	94	92
AGPM5	98	97	94	92

References

[1] A. Gelman, J.B. Carlin, H.S. Stern, D.B. Dunson, A. Vehtari, and D.B. Rubin. *Bayesian Data Analysis, Third Edition.* Chapman & Hall/CRC Texts in Statistical Science. Taylor & Francis, 2013.

Appendices

- Supplementary File 1
- Supplementary File 2

Full result tables in xls format can be downloaded from:
http://research.cs.aalto.fi/csb/software/longp/

Supplementary File 1

targetID	targetName	modelName	convergeFlag	age	bfo	est	fin	rus	caesarean	id	Explained variance									
322	GO:0005768|CC|04|endosome	model 0 ~age+bfo+est+rus+id+age*est+age*rus+age*id+est*rus	2	1	1	1	0	1	0	1	0,10%	0,20%	0,20%	0,10%	0,20%	0,00%	0,10%	99,00%	0,00%	0,00%
41	GO:0043021|MF|02|ribonucleoprotein complex binding	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	23,90%	0,90%	0,90%	60,30%	13,90%					
44	GO:0009507|CC|05|chloroplast	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	0,30%	0,40%	0,10%	90,50%	8,70%					
58	GO:0006144|BP|05|purine nucleobase metabolic process	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	17,90%	0,30%	0,20%	30,50%	51,10%					
74	GO:0009062|BP|05|fatty acid catabolic process	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	20,10%	0,70%	0,40%	69,30%	9,60%					
90	GO:0006270|BP|05|DNA replication initiation	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	0,30%	0,50%	2,70%	55,70%	40,80%					
98	GO:0009847|BP|02|spore germination	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	9,50%	0,80%	0,60%	8,50%	80,50%					
106	GO:0006486|BP|03|protein glycosylation	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	0,00%	0,00%	1,80%	98,10%	0,10%					
118	GO:0009292|BP|03|genetic transfer	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	1,00%	2,70%	2,80%	10,30%	83,10%					
131	GO:0010181|MF|04|FMN binding	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	3,20%	0,50%	1,80%	5,10%	89,50%					
141	GO:0005576|CC|01|extracellular region	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	4,70%	0,40%	0,20%	7,30%	87,40%					
149	GO:0016620|MF|04|oxidoreductase activity, acting on the aldehyde or oxo group of donors, NAD or NADP as acceptor	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	30,70%	0,70%	0,80%	33,10%	34,80%					
160	GO:0016832|MF|04|aldehyde-lyase activity	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	10,80%	0,80%	0,30%	8,70%	79,30%					
168	GO:0046982|MF|04|protein heterodimerization activity	model 0 ~age+bfo+id+age*id	0	1	1	0	0	0	0	1	12,30%	0,30%	5,00%	80,40%	2,00%					
173	GO:0009002|MF|07|serine-type D-Ala-D-Ala carboxypeptidase activity	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	2,70%	0,30%	0,40%	3,30%	93,20%					
184	GO:0003995|MF|04|acyl-CoA dehydrogenase activity	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	15,70%	0,70%	1,20%	10,80%	71,70%					
187	GO:0030247|MF|03|polysaccharide binding	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	4,90%	0,10%	16,10%	24,80%	54,20%					
192	GO:0005507|MF|06|copper ion binding	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	16,80%	1,60%	0,50%	15,50%	65,60%					
205	GO:0006637|BP|04|acyl-CoA metabolic process	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	5,00%	1,00%	0,30%	8,90%	84,80%					
210	GO:0046835|BP|04|carbohydrate phosphorylation	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	6,80%	1,10%	0,30%	16,70%	75,00%					
214	GO:0019901|MF|05|protein kinase binding	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	19,60%	0,50%	0,60%	72,00%	7,20%					
229	GO:0022618|BP|05|ribonucleoprotein complex assembly	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	2,60%	0,20%	3,80%	17,50%	75,90%					
257	GO:0004601|MF|02|peroxidase activity	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	16,50%	1,20%	0,40%	12,20%	69,70%					
279	GO:0009307|BP|05|DNA restriction-modification system	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	2,80%	0,70%	3,90%	14,00%	78,50%					
287	GO:0005615|CC|02|extracellular space	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	0,00%	0,20%	5,60%	13,20%	80,90%					
310	GO:0031177|MF|03|phosphopantetheine binding	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	5,10%	0,00%	0,20%	86,70%	7,90%					
315	GO:0044433|CC|03|cytoplasmic vesicle part	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	0,00%	0,10%	0,00%	99,90%	0,00%					
317	GO:0009887|BP|03|organ morphogenesis	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	0,40%	0,10%	0,20%	99,30%	0,00%					
319	GO:0015662|MF|06|ATPase activity, coupled to transmembrane movement of ions, phosphorylative mechanism	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	5,30%	1,40%	0,60%	8,70%	84,00%					
325	GO:0004842|MF|03|ubiquitin-protein transferase activity	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	0,30%	0,20%	0,20%	98,80%	0,50%					
331	GO:0051223|BP|05|regulation of protein transport	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	10,40%	0,60%	0,40%	87,60%	1,10%					
357	GO:0006289|BP|04|nucleotide-excision repair	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	2,90%	0,60%	0,40%	4,30%	91,80%					
366	GO:0043624|BP|06|cellular protein complex disassembly	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	16,80%	0,30%	0,30%	76,10%	6,50%					
382	GO:0004177|MF|06|aminopeptidase activity	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	3,80%	0,60%	2,40%	6,50%	86,70%					
391	GO:0031123|BP|06|RNA 3-end processing	model 0 ~age+bfo+id+age*id	2	1	1	0	0	0	0	1	3,60%	1,50%	0,50%	21,80%	72,50%					
18	GO:0042157|BP|04|lipoprotein metabolic process	model 0 ~age+bfo+rus+caesarean+id+age*rus+age*caesarean+age*id+rus*caesarean	2	1	1	0	0	1	1	1	4,00%	0,70%	1,30%	0,30%	1,20%	5,20%	0,10%	34,10%	0,00%	53,10%
14	GO:0019200|MF|05|carbohydrate kinase activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	2,20%	1,70%	7,90%	3,00%	41,20%	43,60%	0,40%			
15	GO:0010340|MF|06|carboxyl-O-methyltransferase activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	14,20%	0,20%	3,10%	0,10%	8,10%	33,50%	40,80%			
20	GO:0043565|MF|05|sequence-specific DNA binding	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,70%	0,60%	2,80%	0,50%	1,90%	8,50%	84,90%			
27	GO:0006099|BP|03|tricarboxylic acid cycle	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,00%	0,80%	3,40%	2,10%	4,60%	14,80%	74,40%			
29	GO:0006094|BP|07|gluconeogenesis	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,00%	1,90%	4,20%	0,50%	2,90%	14,80%	75,70%			
30	GO:0030435|BP|03|sporulation resulting in formation of a cellular spore	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,40%	3,50%	3,60%	2,70%	9,30%	46,10%	34,30%			
39	GO:0044550|BP|04|secondary metabolite biosynthetic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,00%	3,50%	4,00%	0,30%	2,70%	15,30%	74,10%			
50	GO:0009236|BP|04|cobalamin biosynthetic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	2,40%	0,30%	1,20%	0,60%	9,70%	47,70%	37,90%			
51	GO:0009231|BP|04|riboflavin biosynthetic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,30%	0,50%	2,20%	1,20%	11,70%	11,40%	72,70%			
53	GO:0051082|MF|03|unfolded protein binding	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	8,40%	0,30%	6,20%	1,90%	8,00%	24,70%	50,50%			
61	GO:0044718|BP|04|siderophore transmembrane transport	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,00%	0,90%	5,00%	0,30%	10,30%	39,60%	43,90%			
62	GO:0009103|BP|05|lipopolysaccharide biosynthetic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	16,30%	0,20%	3,50%	0,20%	9,70%	33,40%	36,60%			
64	GO:0017038|BP|03|protein import	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	25,30%	0,10%	1,20%	1,80%	2,40%	65,10%	4,00%			
68	GO:0016485|BP|05|protein processing	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,20%	1,80%	7,70%	0,50%	4,40%	25,80%	59,70%			
80	GO:0015991|BP|07|ATP hydrolysis coupled proton transport	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,00%	4,10%	3,30%	0,70%	6,10%	18,80%	67,00%			
89	GO:0031419|MF|04|cobalamin binding	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	2,30%	1,00%	2,90%	0,40%	15,00%	35,10%	43,30%			
93	GO:0008137|MF|06|NADH dehydrogenase (ubiquinone) activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,40%	1,10%	2,10%	3,50%	9,80%	65,90%	17,30%			
94	GO:0008134|MF|03|transcription factor binding	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	3,30%	0,40%	1,70%	0,30%	8,80%	22,90%	62,60%			
102	GO:0009396|BP|06|folic acid-containing compound biosynthetic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,40%	0,60%	7,60%	2,80%	6,70%	20,50%	61,40%			
107	GO:0004222|MF|06|metalloendopeptidase activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	2,00%	0,30%	2,80%	0,50%	2,60%	3,40%	88,40%			
108	GO:0006298|BP|04|mismatch repair	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	10,70%	2,20%	0,30%	7,40%	16,10%	40,00%	23,30%			
109	GO:0008202|BP|04|steroid metabolic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	1,50%	2,60%	3,70%	1,10%	8,90%	26,10%	56,20%			
114	GO:0030151|MF|06|molybdenum ion binding	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	24,60%	0,70%	0,60%	0,90%	1,90%	29,20%	42,10%			
121	GO:0006402|BP|06|mRNA catabolic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,50%	0,60%	1,20%	0,20%	0,90%	59,90%	36,60%			
128	GO:0042742|BP|04|defense response to bacterium	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,00%	0,70%	3,80%	2,30%	61,60%	27,80%	3,70%			
129	GO:0042773|BP|05|ATP synthesis coupled electron transport	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,20%	1,90%	0,90%	4,50%	11,20%	64,60%	16,70%			
137	GO:0030976|MF|03|thiamine pyrophosphate binding	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	6,40%	0,40%	3,70%	0,10%	5,20%	32,20%	51,90%			
143	GO:0004620|MF|05|phospholipase activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	5,30%	0,60%	2,30%	0,40%	2,50%	21,50%	67,30%			
148	GO:0016628|MF|04|oxidoreductase activity, acting on the CH-CH group of donors, NAD or NADP as acceptor	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	12,10%	0,40%	1,80%	0,20%	4,40%	14,20%	66,80%			
150	GO:0009162|BP|06|deoxyribonucleoside monophosphate metabolic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	1,70%	1,10%	8,30%	0,20%	48,80%	36,90%	3,00%			
155	GO:0005310|MF|06|dicarboxylic acid transmembrane transporter activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	2,50%	0,10%	4,80%	1,20%	7,80%	23,20%	60,30%			
158	GO:0051183|MF|02|vitamin transporter activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	1,50%	0,70%	3,10%	4,40%	19,40%	49,80%	21,10%			
159	GO:0016836|MF|04|hydro-lyase activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	17,90%	0,30%	1,20%	0,30%	2,10%	16,30%	62,00%			
162	GO:1902358|BP|05|sulfate transmembrane transport	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,70%	0,50%	3,40%	0,20%	8,00%	16,10%	71,00%			
163	GO:0005634|CC|04|nucleus	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	3,10%	0,20%	0,20%	0,20%	0,40%	95,60%	0,30%			
169	GO:0030983|MF|07|mismatched DNA binding	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,70%	3,70%	5,50%	0,70%	5,20%	18,90%	65,20%			
180	GO:0009245|BP|05|lipid A biosynthetic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	9,80%	0,20%	4,70%	0,80%	13,60%	44,80%	26,10%			
185	GO:0003993|MF|06|acid phosphatase activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	12,90%	0,20%	4,30%	3,80%	2,50%	10,20%	66,10%			
186	GO:0000150|MF|02|recombinase activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	14,80%	3,70%	0,80%	2,60%	3,20%	35,10%	39,80%			
200	GO:0015939|BP|05|pantothenate metabolic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,00%	0,60%	3,00%	1,30%	14,40%	66,50%	14,20%			
203	GO:0045454|BP|04|cell redox homeostasis	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	2,70%	0,60%	3,00%	0,50%	2,10%	4,00%	87,20%			
204	GO:0006633|BP|05|fatty acid biosynthetic process	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	1,40%	0,60%	1,50%	0,40%	3,40%	6,90%	85,80%			
208	GO:0004674|MF|06|protein serine/threonine kinase activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	4,00%	1,00%	7,00%	1,70%	34,40%	51,60%	0,10%			
209	GO:0042602|MF|05|riboflavin reductase (NADPH) activity	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	1,20%	0,50%	4,00%	0,20%	11,50%	16,40%	66,20%			
211	GO:0016744|MF|03|transferase activity, transferring aldehyde or ketonic groups	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	12,60%	0,20%	1,30%	0,60%	2,10%	19,90%	63,30%			
235	GO:0006269|BP|05|DNA replication, synthesis of RNA primer	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,10%	2,20%	3,80%	1,70%	4,40%	29,00%	58,80%			
243	GO:0008360|BP|03|regulation of cell shape	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	5,60%	0,50%	3,70%	0,70%	2,90%	9,90%	76,60%			
250	GO:1990391|CC|03|DNA repair complex	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	3,40%	0,50%	1,90%	4,20%	4,40%	6,80%	78,80%			
258	GO:0046916|BP|08|cellular transition metal ion homeostasis	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	14,70%	0,20%	2,40%	1,20%	2,40%	25,60%	53,60%			
260	GO:0048038|MF|03|quinone binding	model 0 ~age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	5,70%	0,30%	2,70%	0,70%	7,40%	66,80%	16,40%			

264	GO:0016998|BP|04|cell wall macromolecule catabolic process	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	5,70%	1,20%	3,00%	0,80%	9,20%	16,20%	63,90%		
289	GO:0015450|MF|05|P-P-bond-hydrolysis-driven protein transmembrane transporter activity	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	6,90%	0,10%	1,70%	0,70%	2,20%	10,70%	77,60%		
292	GO:0006032|BP|06|chitin catabolic process	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	2,60%	0,90%	1,90%	2,80%	8,00%	83,20%	0,60%		
327	GO:0006855|BP|04|drug transmembrane transport	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,00%	1,80%	2,90%	0,70%	5,80%	14,60%	74,10%		
328	GO:0044702|BP|02|single organism reproductive process	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,20%	2,90%	2,70%	7,90%	25,40%	60,00%	1,00%		
336	GO:0015296|MF|06|anion:cation symporter activity	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	3,60%	0,20%	2,20%	1,30%	3,30%	10,70%	78,70%		
350	GO:0006414|BP|05|translational elongation	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	0,60%	0,10%	3,30%	1,20%	1,40%	7,10%	86,30%		
360	GO:0016742|MF|04|hydroxymethyl-, formyl- and related transferase activity	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	1,60%	0,40%	2,20%	0,40%	7,90%	15,50%	72,00%		
364	GO:0009253|BP|07|peptidoglycan catabolic process	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	4,80%	0,30%	4,10%	5,70%	1,70%	32,00%	51,30%		
371	GO:0051537|MF|04|2 iron, 2 sulfur cluster binding	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	18,80%	0,30%	2,00%	0,40%	5,30%	40,50%	32,70%		
389	GO:0010498|BP|05|proteasomal protein catabolic process	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	4,10%	0,70%	3,80%	0,90%	39,20%	48,90%	2,40%		
390	GO:0016661|MF|03|oxidoreductase activity, acting on other nitrogenous compounds as donors	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	25,60%	0,30%	1,80%	0,50%	5,70%	51,80%	14,30%		
393	GO:0006801|BP|04|superoxide metabolic process	model 0 ~ age+bfo+rus+id+age*rus+age*id	2	1	1	0	0	1	0	1	6,90%	1,00%	0,70%	0,80%	3,60%	11,50%	75,50%		
213	GO:0003964|MF|06|RNA-directed DNA polymerase activity	model 0 ~ age+caesarean+id+age*caesarean+age*id	2	1	0	0	0	0	1	1	1,60%	0,60%	1,40%	0,10%	60,50%	35,90%			
386	GO:0006413|BP|03|translational initiation	model 0 ~ age+caesarean+id+age*caesarean+age*id	2	1	0	0	0	0	1	1	0,00%	0,10%	1,20%	0,00%	98,30%	0,30%			
340	GO:0003906|MF|04|DNA-(apurinic or apyrimidinic site) lyase activity	model 0 ~ age+est+fin+id+age*est+age*fin+age*id+est*fin	2	1	0	1	1	0	0	1	0,00%	0,00%	0,10%	0,10%	0,10%	0,00%	99,50%	0,00%	0,10%
82	GO:0004523|MF|08|RNA-DNA hybrid ribonuclease activity	model 0 ~ age+fin+id+age*fin+age*id	2	1	0	0	1	0	0	1	11,60%	0,70%	1,90%	0,60%	8,10%	77,00%			
146	GO:0005777|CC|05|peroxisome	model 0 ~ age+fin+id+age*fin+age*id	2	1	0	0	1	0	0	1	8,80%	0,20%	0,70%	3,50%	68,90%	18,00%			
195	GO:0009082|BP|05|branched-chain amino acid biosynthetic process	model 0 ~ age+fin+id+age*fin+age*id	2	1	0	0	1	0	0	1	4,90%	0,40%	0,50%	0,00%	9,00%	85,20%			
1	GO:0000287|MF|05|magnesium ion binding	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	34,10%	0,50%	22,40%	43,00%					
6	GO:0003951|MF|05|NAD+ kinase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	9,20%	0,80%	23,00%	67,00%					
9	GO:0016790|MF|04|thiolester hydrolase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	28,70%	1,00%	49,30%	21,00%					
10	GO:0009289|CC|03|pilus	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	22,50%	0,40%	70,10%	7,00%					
11	GO:0009288|CC|03|bacterial-type flagellum	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	0,10%	0,20%	35,80%	63,90%					
13	GO:0005737|CC|03|cytoplasm	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	15,70%	0,60%	10,10%	73,60%					
16	GO:0030288|CC|03|outer membrane-bounded periplasmic space	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	20,20%	0,70%	19,00%	60,10%					
21	GO:0006783|BP|04|heme biosynthetic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	29,70%	0,60%	56,20%	13,50%					
22	GO:0015979|BP|03|photosynthesis	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	0,50%	3,90%	17,00%	78,60%					
23	GO:0009435|BP|08|NAD biosynthetic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	6,00%	3,40%	25,70%	64,90%					
24	GO:0009432|BP|04|SOS response	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	28,20%	0,70%	40,80%	30,20%					
25	GO:0019321|BP|05|pentose metabolic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	2,30%	8,30%	12,10%	77,30%					
34	GO:0006541|BP|06|glutamine metabolic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	11,00%	3,10%	8,10%	77,80%					
35	GO:0016838|MF|04|carbon-oxygen lyase activity, acting on phosphates	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	0,00%	1,70%	15,50%	82,70%					
36	GO:0016831|MF|04|carboxy-lyase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	7,30%	1,10%	14,90%	76,70%					
37	GO:0097264|BP|05|self proteolysis	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	0,40%	1,40%	98,20%	0,00%					
38	GO:0015035|MF|05|protein disulfide oxidoreductase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	25,30%	0,10%	61,00%	13,60%					
40	GO:0030170|MF|03|pyridoxal phosphate binding	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	3,30%	1,80%	37,60%	57,30%					
42	GO:0006730|BP|03|one-carbon metabolic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	9,60%	1,70%	9,60%	79,20%					
43	GO:0016901|MF|04|oxidoreductase activity, acting on the CH-OH group of donors, quinone or similar compound as acce	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	22,40%	0,20%	65,60%	11,80%					
45	GO:0032784|BP|07|regulation of DNA-templated transcription, elongation	model 0 ~ age+id+age*id	1	1	0	0	0	0	0	1	7,60%	1,00%	4,10%	87,30%					
46	GO:0005622|CC|02|intracellular	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	10,60%	0,50%	6,60%	82,30%					
47	GO:0080135|BP|04|regulation of cellular response to stress	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	2,70%	0,60%	3,10%	93,60%					
48	GO:0003697|MF|06|single-stranded DNA binding	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	3,50%	1,80%	6,80%	87,80%					
49	GO:0016763|MF|04|transferase activity, transferring pentosyl groups	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	1,70%	0,40%	6,60%	91,30%					
54	GO:0046939|BP|06|nucleotide phosphorylation	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	5,10%	0,40%	93,60%	0,90%					
56	GO:0015926|MF|05|glucosidase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	10,50%	0,10%	18,60%	70,80%					
63	GO:0018298|BP|06|protein-chromophore linkage	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	27,60%	1,20%	57,00%	14,20%					
67	GO:0006935|BP|03|chemotaxis	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	0,30%	0,50%	28,10%	71,20%					
69	GO:0016226|BP|03|iron-sulfur cluster assembly	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	16,10%	1,60%	5,00%	77,20%					
70	GO:0090502|BP|06|RNA phosphodiester bond hydrolysis, endonucleolytic	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	14,90%	0,20%	62,50%	22,40%					
71	GO:0008270|MF|06|zinc ion binding	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	22,60%	0,70%	17,10%	59,60%					
72	GO:0003729|MF|06|mRNA binding	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	0,00%	14,10%	85,80%	0,10%					
73	GO:0016894|MF|06|endonuclease activity, active with either ribo- or deoxyribonucleic acids and producing 3-phosphom	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	21,70%	0,30%	74,00%	4,00%					
76	GO:0009065|BP|06|glutamine family amino acid catabolic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	17,40%	0,50%	17,20%	64,90%					
78	GO:0004725|MF|07|protein tyrosine phosphatase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	2,90%	1,30%	7,00%	88,80%					
83	GO:0030261|BP|03|chromosome condensation	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	6,50%	0,90%	4,80%	87,80%					
84	GO:0004312|MF|05|fatty acid synthase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	4,40%	2,20%	9,40%	84,00%					
85	GO:0006071|BP|04|glycerol metabolic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	5,40%	0,60%	3,40%	90,60%					
86	GO:0005524|MF|05|ATP binding	model 0 ~ age+id+age*id	1	1	0	0	0	0	0	1	3,10%	0,70%	1,40%	94,90%					
87	GO:0005525|MF|05|GTP binding	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	4,40%	0,70%	5,60%	89,30%					
88	GO:0015627|CC|02|type II protein secretion system complex	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	27,00%	0,70%	49,30%	23,10%					
91	GO:0006275|BP|06|regulation of DNA replication	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	19,00%	0,60%	6,40%	73,90%					
92	GO:0008138|MF|07|protein tyrosine/serine/threonine phosphatase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	16,40%	0,40%	48,40%	34,80%					
97	GO:0046961|MF|07|proton-transporting ATPase activity, rotational mechanism	model 0 ~ age+id+age*id	1	1	0	0	0	0	0	1	0,80%	0,70%	7,30%	91,20%					
100	GO:0051260|BP|07|protein homooligomerization	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	20,50%	0,20%	70,20%	9,10%					
103	GO:0005727|CC|03|extrachromosomal circular DNA	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	0,10%	0,40%	65,30%	34,20%					
104	GO:0004181|MF|07|metallocarboxypeptidase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	2,30%	0,30%	8,90%	88,40%					
105	GO:0046854|BP|06|phosphatidylinositol phosphorylation	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	3,00%	0,80%	5,70%	90,50%					
112	GO:0016846|MF|03|carbon-sulfur lyase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	7,40%	0,40%	3,50%	88,70%					
113	GO:0016840|MF|03|carbon-nitrogen lyase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	17,40%	0,70%	7,30%	74,60%					
115	GO:0019028|CC|02|viral capsid	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	10,90%	0,40%	7,50%	81,20%					
117	GO:0016783|MF|04|sulfurtransferase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	19,00%	0,50%	70,30%	10,10%					
120	GO:0004559|MF|06|alpha-mannosidase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	0,60%	1,10%	7,80%	90,40%					
123	GO:0006826|BP|07|iron ion transport	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	1,60%	1,10%	11,00%	86,30%					
124	GO:1990204|CC|02|oxidoreductase complex	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	11,50%	2,50%	10,10%	75,90%					
125	GO:0016709|MF|04|oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxyg	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	23,80%	1,20%	44,80%	30,20%					
126	GO:0016706|MF|04|oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxyg	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	21,50%	0,30%	74,70%	3,60%					
127	GO:0016702|MF|04|oxidoreductase activity, acting on single donors with incorporation of molecular oxygen, incorporat	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	24,00%	2,40%	68,00%	5,60%					
130	GO:0006457|BP|05|protein folding	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	2,30%	1,40%	10,80%	85,50%					
132	GO:0016114|BP|05|terpenoid biosynthetic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	1,60%	1,00%	1,40%	96,00%					
135	GO:0009405|BP|02|pathogenesis	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	9,70%	4,80%	73,10%	12,50%					
136	GO:0009408|BP|03|response to heat	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	18,10%	0,40%	6,50%	75,00%					
138	GO:0044445|CC|04|cytosolic part	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	19,80%	0,90%	15,30%	63,90%					
145	GO:0005773|CC|04|vacuole	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	4,40%	7,60%	60,70%	27,30%					
151	GO:0070566|MF|05|adenylyltransferase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	7,70%	1,30%	4,20%	86,80%					
156	GO:0051181|BP|03|cofactor transport	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	21,50%	0,70%	65,20%	12,60%					
161	GO:0016833|MF|04|oxo-acid-lyase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	19,10%	0,50%	10,60%	69,90%					

165	GO:0006526|BP|07|arginine biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	2,50%	0,60%	8,90%	88,10%
170	GO:0055072|BP|09|iron ion homeostasis	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	27,10%	1,10%	53,50%	18,20%
171	GO:0071555|BP|03|cell wall organization	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	22,30%	0,40%	61,10%	16,20%
172	GO:0009007|MF|06|site-specific DNA-methyltransferase (adenine-specific) activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	8,40%	5,30%	41,30%	45,10%
174	GO:0070403|MF|04|NAD+ binding	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	0,40%	0,30%	10,50%	88,80%
176	GO:0006749|BP|04|glutathione metabolic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	22,70%	0,40%	70,50%	6,40%
177	GO:0006744|BP|06|ubiquinone biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	26,30%	0,80%	62,90%	10,10%
182	GO:0045263|CC|03|proton-transporting ATP synthase complex, coupling factor F(o)	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	0,00%	1,10%	98,30%	0,60%
189	GO:0005887|CC|03|integral component of plasma membrane	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	13,00%	2,10%	17,00%	68,00%
190	GO:0005886|CC|02|plasma membrane	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	28,60%	0,50%	48,50%	22,40%
191	GO:0005509|MF|05|calcium ion binding	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	5,70%	0,40%	27,10%	66,90%
193	GO:0009089|BP|05|lysine biosynthetic process via diaminopimelate	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	5,10%	0,60%	7,10%	87,20%
194	GO:0009086|BP|06|methionine biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	26,30%	0,40%	15,10%	58,10%
196	GO:0050778|BP|05|positive regulation of immune response	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	8,80%	1,10%	14,20%	76,00%
197	GO:0005743|CC|04|mitochondrial inner membrane	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	2,60%	0,10%	97,10%	0,20%
199	GO:0015937|BP|06|coenzyme A biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	2,90%	1,10%	3,30%	92,70%
206	GO:0005581|CC|01|collagen trimer	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	1,00%	0,60%	50,40%	48,00%
212	GO:0006313|BP|03|transposition, DNA-mediated	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	4,70%	2,50%	38,40%	54,50%
215	GO:0035438|MF|04|cyclic-di-GMP binding	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	0,00%	0,70%	32,60%	66,70%
218	GO:0016868|MF|04|intramolecular transferase activity, phosphotransferases	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	3,80%	0,90%	2,90%	92,30%
221	GO:0006098|BP|05|pentose-phosphate shunt	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	12,40%	0,40%	7,20%	80,00%
223	GO:0009070|BP|06|serine family amino acid biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	18,20%	0,50%	13,30%	68,10%
224	GO:0032101|BP|04|regulation of response to external stimulus	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	18,40%	1,00%	74,80%	5,80%
225	GO:0005977|BP|04|glycogen metabolic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	0,50%	0,60%	7,30%	91,50%
232	GO:0019239|MF|02|deaminase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	3,30%	1,60%	7,80%	87,30%
233	GO:0006265|BP|06|DNA topological change	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	1,30%	1,90%	5,30%	91,40%
234	GO:0006261|BP|06|DNA-dependent DNA replication	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	4,50%	0,70%	3,80%	91,00%
238	GO:0005247|MF|08|voltage-gated chloride channel activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	10,40%	1,50%	7,30%	80,80%
239	GO:0004112|MF|06|cyclic-nucleotide phosphodiesterase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	24,90%	0,20%	56,60%	18,30%
241	GO:0016725|MF|03|oxidoreductase activity, acting on CH or CH2 groups	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	16,40%	1,00%	5,60%	76,90%
244	GO:0031301|CC|02|integral component of organelle membrane	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	0,00%	0,00%	99,90%	0,00%
245	GO:0019835|BP|02|cytolysis	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	21,30%	0,70%	6,70%	71,30%
247	GO:0009423|BP|07|chorismate biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	5,00%	0,50%	4,10%	90,40%
248	GO:0009425|CC|03|bacterial-type flagellum basal body	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	12,20%	0,60%	73,50%	13,70%
249	GO:0009424|CC|03|bacterial-type flagellum hook	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	9,60%	0,70%	48,50%	41,20%
251	GO:0008483|MF|04|transaminase activity	model 0 ~age+id+age*id	1	1	0	0	0	0	0	1	7,50%	0,60%	4,50%	87,40%
255	GO:0000738|BP|06|DNA catabolic process, exonucleolytic	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	6,60%	0,90%	5,20%	87,30%
256	GO:0000737|BP|06|DNA catabolic process, endonucleolytic	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	19,40%	1,60%	9,30%	69,70%
259	GO:0046653|BP|06|tetrahydrofolate metabolic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	14,70%	1,00%	7,80%	76,60%
262	GO:0004190|MF|06|aspartic-type endopeptidase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	10,50%	0,50%	10,50%	78,50%
265	GO:0015718|BP|05|monocarboxylic acid transport	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	31,70%	0,60%	35,00%	32,70%
266	GO:0047661|MF|06|amino-acid racemase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	2,90%	0,70%	2,70%	93,70%
267	GO:0050661|MF|04|NADP binding	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	6,20%	0,60%	4,20%	88,90%
268	GO:0050660|MF|04|flavin adenine dinucleotide binding	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	9,50%	0,40%	6,00%	84,20%
269	GO:0005694|CC|04|chromosome	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	4,30%	0,40%	4,90%	90,40%
270	GO:0004252|MF|05|serine-type endopeptidase activity	model 0 ~age+id+age*id	1	1	0	0	0	0	0	1	5,30%	0,60%	4,30%	89,80%
271	GO:0042823|BP|05|pyridoxal phosphate biosynthetic process	model 0 ~age+id+age*id	1	1	0	0	0	0	0	1	5,00%	0,90%	9,00%	85,10%
273	GO:0043190|CC|03|ATP-binding cassette (ABC) transporter complex	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	27,00%	0,50%	54,80%	17,60%
275	GO:0006534|BP|05|cysteine metabolic process	model 0 ~age+id+age*id	1	1	0	0	0	0	0	1	5,20%	0,40%	12,10%	82,30%
276	GO:0008897|MF|05|holo-[acyl-carrier-protein] synthase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	15,80%	0,40%	6,80%	77,00%
277	GO:0000226|BP|04|microtubule cytoskeleton organization	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	11,20%	1,00%	3,80%	84,00%
278	GO:0016032|BP|03|viral process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	20,80%	0,20%	63,20%	15,80%
280	GO:0016857|MF|04|racemase and epimerase activity, acting on carbohydrates and derivatives	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	6,30%	0,70%	17,40%	75,60%
281	GO:0002161|MF|05|aminoacyl-tRNA editing activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	0,20%	1,90%	14,60%	83,30%
283	GO:0006189|BP|09|de novo IMP biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	2,70%	1,90%	15,80%	79,60%
285	GO:0008649|MF|06|rRNA methyltransferase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	13,60%	0,40%	9,30%	76,70%
286	GO:0051205|BP|05|protein insertion into membrane	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	19,90%	1,10%	7,30%	71,70%
288	GO:0005618|CC|03|cell wall	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	13,00%	0,60%	14,50%	72,00%
290	GO:0051129|BP|04|negative regulation of cellular component organization	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	25,70%	0,20%	21,20%	52,90%
291	GO:0005829|CC|04|cytosol	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	25,30%	0,30%	51,10%	23,30%
293	GO:0043094|BP|04|cellular metabolic compound salvage	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	9,90%	0,50%	6,00%	83,60%
297	GO:0003684|MF|05|damaged DNA binding	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	3,50%	0,70%	13,70%	82,10%
298	GO:0016778|MF|04|diphosphotransferase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	7,60%	1,10%	5,00%	86,40%
299	GO:0016776|MF|04|phosphotransferase activity, phosphate group as acceptor	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	3,80%	2,70%	35,20%	58,40%
300	GO:0016774|MF|04|phosphotransferase activity, carboxyl group as acceptor	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	3,60%	0,40%	2,70%	93,30%
301	GO:0009229|BP|05|thiamine diphosphate biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	6,40%	1,10%	4,90%	87,60%
306	GO:0008175|MF|06|tRNA methyltransferase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	9,20%	1,00%	21,90%	67,90%
308	GO:0019843|MF|05|rRNA binding	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	5,40%	0,70%	3,00%	91,00%
309	GO:0000139|CC|03|Golgi membrane	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	0,10%	0,10%	99,80%	0,00%
311	GO:0009416|BP|04|response to light stimulus	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	21,30%	0,50%	73,10%	5,10%
313	GO:0045786|BP|05|negative regulation of cell cycle	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	5,90%	1,40%	92,00%	0,60%
318	GO:0009888|BP|03|tissue development	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	1,60%	0,30%	7,50%	90,60%
320	GO:0044212|MF|06|transcription regulatory region DNA binding	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	26,70%	0,30%	53,90%	19,10%
321	GO:0044218|CC|04|other organism cell membrane	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	23,10%	0,20%	43,50%	33,20%
323	GO:0007610|BP|02|behavior	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	4,10%	0,40%	37,00%	58,50%
324	GO:0004143|MF|05|diacylglycerol kinase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	5,20%	0,60%	2,40%	91,90%
326	GO:0019184|BP|06|nonribosomal peptide biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	22,20%	0,40%	68,40%	8,90%
329	GO:0001101|BP|03|response to acid chemical	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	24,00%	1,30%	43,60%	31,00%
330	GO:0004659|MF|04|prenyltransferase activity	model 0 ~age+id+age*id	1	1	0	0	0	0	0	1	6,20%	1,20%	2,90%	89,70%
332	GO:0008083|MF|04|growth factor activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	22,40%	0,70%	71,90%	5,00%
333	GO:0008080|MF|06|N-acetyltransferase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	7,80%	0,90%	8,00%	83,20%
334	GO:0016805|MF|06|dipeptidase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	6,30%	1,80%	8,80%	83,10%
337	GO:0015299|MF|07|solute:proton antiporter activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	6,40%	0,40%	8,00%	85,20%
338	GO:0015748|BP|03|organophosphate ester transport	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	24,50%	0,50%	64,30%	10,70%
339	GO:0002697|BP|04|regulation of immune effector process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	0,20%	0,50%	98,70%	0,50%
341	GO:0003909|MF|04|DNA ligase activity	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	2,30%	0,50%	5,10%	92,10%
345	GO:0009190|BP|06|cyclic nucleotide biosynthetic process	model 0 ~age+id+age*id	2	1	0	0	0	0	0	1	25,70%	0,70%	60,10%	13,50%

346	GO:0006529|BP|06|asparagine biosynthetic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	0,10%	0,40%	6,30%	93,20%		
347	GO:0051119|MF|04|sugar transmembrane transporter activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	27,80%	0,30%	47,60%	24,30%		
348	GO:0010038|BP|04|response to metal ion	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	18,70%	0,50%	7,00%	73,70%		
349	GO:0005813|CC|04|centrosome	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	5,30%	3,00%	17,50%	74,20%		
351	GO:0046527|MF|05|glucosyltransferase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	26,80%	0,70%	58,40%	14,10%		
352	GO:0016881|MF|04|acid-amino acid ligase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	10,90%	1,70%	22,00%	65,40%		
353	GO:0016888|MF|07|endodeoxyribonuclease activity, producing 5-phosphomonoesters	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	12,40%	2,20%	13,90%	71,50%		
355	GO:0040008|BP|03|regulation of growth	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	20,90%	2,70%	74,00%	2,50%		
356	GO:0006284|BP|04|base-excision repair	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	1,50%	0,90%	23,80%	73,80%		
358	GO:0051302|BP|04|regulation of cell division	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	12,20%	3,00%	81,40%	3,40%		
359	GO:0051301|BP|03|cell division	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	11,70%	0,50%	6,40%	81,40%		
361	GO:0009250|BP|05|glucan biosynthetic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	9,60%	0,20%	12,10%	78,10%		
362	GO:0009251|BP|06|glucan catabolic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	1,80%	1,20%	17,10%	80,00%		
363	GO:0009252|BP|03|peptidoglycan biosynthetic process	model 0 ~ age+id+age*id	1	1	0	0	0	0	0	1	11,60%	0,70%	4,20%	83,50%		
365	GO:0016668|MF|04|oxidoreductase activity, acting on a sulfur group of donors, NAD(P) as acceptor	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	16,50%	1,10%	7,50%	74,80%		
370	GO:0051539|MF|04|4 iron, 4 sulfur cluster binding	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	7,60%	0,50%	6,20%	85,70%		
372	GO:0016151|MF|06|nickel cation binding	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	17,20%	0,70%	20,80%	61,40%		
374	GO:0046912|MF|04|transferase activity, transferring acyl groups, acyl groups converted into alkyl on transfer	model 0 ~ age+id+age*id	0	1	0	0	0	0	0	1	6,80%	0,60%	2,50%	90,10%		
375	GO:0071973|BP|05|bacterial-type flagellum-dependent cell motility	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	13,10%	0,50%	58,30%	28,10%		
377	GO:0006817|BP|06|phosphate ion transport	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	1,90%	0,50%	5,10%	92,50%		
378	GO:1901677|MF|03|phosphate transmembrane transporter activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	14,30%	1,10%	4,70%	79,90%		
379	GO:0006206|BP|05|pyrimidine nucleobase metabolic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	11,50%	0,30%	6,80%	81,40%		
380	GO:0006200|BP|07|ATP catabolic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	7,70%	0,60%	3,60%	88,10%		
381	GO:0004176|MF|05|ATP-dependent peptidase activity	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	3,80%	0,80%	4,80%	90,60%		
383	GO:0001522|BP|06|pseudouridine synthesis	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	5,40%	1,00%	13,20%	80,40%		
384	GO:0051607|BP|03|defense response to virus	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	8,40%	4,10%	8,20%	79,30%		
385	GO:0000902|BP|04|cell morphogenesis	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	6,20%	0,40%	11,50%	81,90%		
387	GO:0006412|BP|05|translation	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	1,70%	1,20%	4,50%	92,50%		
394	GO:0070526|BP|07|threonylcarbamoyladenosine biosynthetic process	model 0 ~ age+id+age*id	2	1	0	0	0	0	0	1	2,30%	1,50%	16,50%	79,70%		
3	GO:0046677|BP|04|response to antibiotic	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	4,50%	0,40%	0,10%	0,20%	83,10%	11,60%
5	GO:0071805|BP|04|potassium ion transmembrane transport	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	1,10%	8,20%	4,80%	7,30%	54,20%	24,40%
7	GO:0042803|MF|04|protein homodimerization activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	5,90%	0,10%	0,70%	2,20%	5,10%	85,90%
26	GO:0007059|BP|03|chromosome segregation	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	1,50%	2,20%	0,70%	4,40%	2,10%	89,00%
28	GO:0006096|BP|03|glycolytic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	4,10%	9,40%	0,30%	39,80%	20,10%	26,20%
31	GO:0020037|MF|04|heme binding	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	5,20%	0,40%	1,70%	11,80%	67,50%	13,30%
32	GO:0006352|BP|06|DNA-templated transcription, initiation	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	0,50%	4,80%	0,80%	10,60%	17,20%	66,10%
33	GO:0006546|BP|07|glycine catabolic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	25,10%	0,90%	0,60%	1,50%	68,10%	3,70%
52	GO:0015171|MF|06|amino acid transmembrane transporter activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	12,00%	2,50%	1,10%	4,80%	7,50%	72,10%
59	GO:0015833|BP|04|peptide transport	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	8,10%	1,40%	3,90%	5,40%	64,00%	17,20%
65	GO:0016812|MF|04|hydrolase activity, acting on carbon-nitrogen (but not peptide) bonds, in cyclic amides	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	0,00%	4,40%	18,70%	0,40%	75,10%	1,30%
75	GO:0009060|BP|05|aerobic respiration	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	1,90%	0,30%	0,00%	0,10%	97,70%	0,00%
79	GO:0003796|MF|05|lysozyme activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	0,90%	2,80%	0,70%	2,60%	19,60%	73,30%
96	GO:0010951|BP|07|negative regulation of endopeptidase activity	model 0 ~ age+rus+id+age*rus+age*id	1	1	0	0	0	1	0	1	0,90%	4,30%	0,10%	7,60%	17,30%	69,90%
101	GO:0017004|BP|07|cytochrome complex assembly	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	0,00%	0,10%	0,20%	13,40%	14,30%	72,00%
111	GO:0016023|CC|04|cytoplasmic membrane-bounded vesicle	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	8,20%	0,00%	0,60%	2,40%	7,10%	81,70%
116	GO:0005991|BP|04|trehalose metabolic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	17,80%	2,00%	0,90%	4,10%	67,00%	8,20%
133	GO:0031167|BP|05|rRNA methylation	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	6,90%	2,70%	1,10%	17,90%	19,50%	51,90%
134	GO:0009401|BP|04|phosphoenolpyruvate-dependent sugar phosphotransferase system	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	16,00%	1,90%	0,70%	2,40%	7,20%	71,80%
139	GO:0044448|CC|04|cell cortex part	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	2,50%	5,30%	0,40%	45,10%	23,50%	23,20%
140	GO:0003333|BP|05|amino acid transmembrane transport	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	24,40%	3,60%	0,90%	7,60%	6,40%	57,20%
142	GO:0005578|CC|02|proteinaceous extracellular matrix	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	2,90%	0,40%	2,70%	2,50%	2,30%	89,30%
144	GO:0015671|BP|04|oxygen transport	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	14,10%	0,90%	2,10%	0,20%	78,30%	4,40%
153	GO:0070569|MF|05|uridylyltransferase activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	16,50%	6,50%	0,60%	20,20%	54,60%	1,60%
157	GO:0051180|BP|03|vitamin transport	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	28,90%	0,50%	0,40%	1,50%	62,20%	6,50%
166	GO:0006869|BP|03|lipid transport	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	32,40%	1,30%	1,20%	2,30%	48,70%	14,10%
167	GO:0045226|BP|05|extracellular polysaccharide biosynthetic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	4,50%	3,00%	0,70%	1,10%	16,50%	74,10%
178	GO:0016755|MF|04|transferase activity, transferring amino-acyl groups	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	7,80%	2,50%	4,10%	2,70%	71,60%	11,20%
181	GO:0008199|MF|07|ferric iron binding	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	26,10%	1,00%	0,30%	2,30%	65,50%	4,80%
183	GO:0051920|MF|02|peroxiredoxin activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	0,90%	1,40%	0,90%	1,00%	17,60%	78,20%
198	GO:0015932|MF|04|nucleobase-containing compound transmembrane transporter activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	33,20%	1,20%	0,50%	2,20%	41,40%	21,40%
202	GO:0042537|BP|04|benzene-containing compound metabolic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	12,20%	2,50%	1,10%	5,20%	56,90%	22,20%
222	GO:0043066|BP|07|negative regulation of apoptotic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	11,30%	0,70%	0,00%	1,70%	85,80%	0,50%
226	GO:0006777|BP|04|Mo-molybdopterin cofactor biosynthetic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	19,60%	0,70%	1,10%	3,70%	62,30%	12,60%
228	GO:0009279|CC|03|cell outer membrane	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	3,30%	5,60%	0,20%	12,20%	30,00%	48,70%
236	GO:0005794|CC|04|Golgi apparatus	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	2,10%	2,70%	0,60%	7,50%	39,30%	47,70%
240	GO:0008982|MF|04|protein-N(PI)-phosphohistidine-sugar phosphotransferase activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	13,10%	5,50%	0,40%	13,00%	3,50%	64,50%
242	GO:0008146|MF|04|sulfotransferase activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	10,30%	0,60%	0,10%	0,70%	80,00%	8,30%
252	GO:0008484|MF|04|sulfuric ester hydrolase activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	0,90%	2,10%	0,70%	10,20%	23,40%	62,70%
261	GO:0004197|MF|06|cysteine-type endopeptidase activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	0,10%	1,10%	1,70%	5,80%	90,90%	0,40%
263	GO:0016999|BP|04|antibiotic metabolic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	11,50%	0,80%	0,30%	3,50%	26,90%	57,00%
272	GO:0045936|BP|07|negative regulation of phosphate metabolic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	27,50%	0,10%	0,30%	1,90%	56,60%	13,60%
282	GO:0030145|MF|06|manganese ion binding	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	13,30%	1,30%	0,40%	2,00%	19,20%	63,80%
294	GO:0008374|MF|05|O-acyltransferase activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	11,40%	1,20%	0,40%	2,50%	6,40%	78,10%
295	GO:0008375|MF|05|acetylglucosaminyltransferase activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	0,80%	3,90%	4,50%	2,00%	37,00%	51,80%
303	GO:0009226|BP|05|nucleotide-sugar biosynthetic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	12,80%	2,60%	1,00%	5,80%	22,70%	55,10%
304	GO:0009221|BP|07|pyrimidine deoxyribonucleotide biosynthetic process	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	6,30%	4,00%	0,70%	51,70%	22,10%	15,30%
305	GO:0008172|MF|05|S-methyltransferase activity	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	7,50%	1,30%	0,90%	3,70%	8,10%	78,50%
312	GO:0070013|CC|03|intracellular organelle lumen	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	3,00%	0,00%	1,70%	6,20%	76,60%	12,50%
314	GO:0044780|BP|05|bacterial-type flagellum assembly	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	8,00%	0,20%	0,70%	0,20%	40,60%	50,30%
316	GO:0044434|CC|04|chloroplast part	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	1,80%	0,00%	0,40%	2,30%	12,00%	83,40%
342	GO:0006836|BP|03|neurotransmitter transport	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	9,10%	3,30%	5,40%	6,20%	41,60%	34,40%
368	GO:0000160|BP|05|phosphorelay signal transduction system	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	0,60%	3,30%	0,50%	2,40%	15,50%	77,90%
376	GO:0035725|BP|05|sodium ion transmembrane transport	model 0 ~ age+rus+id+age*rus+age*id	2	1	0	0	0	1	0	1	16,70%	1,70%	0,40%	2,80%	11,90%	66,60%
296	GO:0003682|MF|02|chromatin binding	model 0 ~ bfo+est+rus+id+est*rus	2	0	1	1	0	1	0	1	0,40%	0,20%	0,00%	0,30%	0,00%	99,10%
2	GO:0018106|BP|07|peptidyl-histidine phosphorylation	model 0 ~ bfo+id	2	0	1	0	0	0	0	1	3,80%	1,50%	94,70%			
60	GO:0070062|CC|04|extracellular vesicular exosome	model 0 ~ bfo+id	2	0	1	0	0	0	0	1	1,80%	16,20%	82,00%			
77	GO:0019012|CC|01|virion	model 0 ~ bfo+id	2	0	1	0	0	0	0	1	4,00%	0,00%	96,00%			

175	GO:0005929|CC|02|cilium	model 0 ~ bfo+id	2	0	1	0	0	0	0	1	0,20%	0,10%	99,70%								
343	GO:0043254|BP|04|regulation of protein complex assembly	model 0 ~ bfo+id	2	0	1	0	0	0	0	1	3,60%	3,60%	92,80%								
154	GO:0006665|BP|04|sphingolipid metabolic process	model 0 ~ bfo+rus+id	2	0	1	0	0	1	0	1	2,70%	5,20%	10,20%	81,90%							
207	GO:0008745|MF|05|N-acetylmuramoyl-L-alanine amidase activity	model 0 ~ bfo+rus+id	2	0	1	0	0	1	0	1	1,90%	4,50%	3,50%	90,20%							
392	GO:0043900|BP|03|regulation of multi-organism process	model 0 ~ bfo+rus+id	2	0	1	0	0	1	0	1	6,20%	0,30%	35,20%	58,40%							
344	GO:0045944|BP|08|positive regulation of transcription from RNA polymerase II promoter	model 0 ~ est+fin+rus+caesarean+id+est*fin+est*rus+est*caesarean+fin*rus+fin*caesarean+rus*caesarean	2	0	0	1	1	1	1	1	0,00%	0,00%	0,00%	0,00%	0,30%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	99,60%
4	GO:0005739|CC|04|mitochondrion	model 0 ~ est+fin+rus+id+est*fin+est*rus+fin*rus	2	0	0	1	1	1	0	1	0,00%	0,00%	0,00%	0,20%	0,00%	0,00%	0,00%	99,80%				
95	GO:0000917|BP|05|barrier septum assembly	model 0 ~ est+rus+id+est*rus	2	0	0	1	0	1	0	1	0,20%	0,90%	0,50%	0,00%	98,40%							
81	GO:0004525|MF|07|ribonuclease III activity	model 0 ~ fin+id	2	0	0	0	1	0	0	1	0,10%	0,50%	99,50%									
201	GO:0071897|BP|05|DNA biosynthetic process	model 0 ~ fin+id	2	0	0	0	1	0	0	1	1,70%	8,60%	89,70%									
8	GO:0016877|MF|03|ligase activity, forming carbon-sulfur bonds	model 0 ~ id	2	0	0	0	0	0	0	1	5,90%	94,10%										
12	GO:0032776|BP|05|DNA methylation on cytosine	model 0 ~ id	2	0	0	0	0	0	0	1	4,60%	95,40%										
17	GO:0045491|BP|07|xylan metabolic process	model 0 ~ id	2	0	0	0	0	0	0	1	21,80%	78,20%										
19	GO:0005840|CC|03|ribosome	model 0 ~ id	2	0	0	0	0	0	0	1	11,90%	88,10%										
55	GO:0006222|BP|08|UMP biosynthetic process	model 0 ~ id	2	0	0	0	0	0	0	1	0,50%	99,50%										
57	GO:0015925|MF|05|galactosidase activity	model 0 ~ id	2	0	0	0	0	0	0	1	4,70%	95,30%										
99	GO:0000724|BP|05|double-strand break repair via homologous recombination	model 0 ~ id	2	0	0	0	0	0	0	1	4,40%	95,60%										
110	GO:0042254|BP|04|ribosome biogenesis	model 0 ~ id	2	0	0	0	0	0	0	1	2,40%	97,60%										
119	GO:0008658|MF|03|penicillin binding	model 0 ~ id	2	0	0	0	0	0	0	1	2,90%	97,10%										
122	GO:0006561|BP|05|proline biosynthetic process	model 0 ~ id	2	0	0	0	0	0	0	1	4,10%	95,90%										
147	GO:0015197|MF|03|peptide transporter activity	model 0 ~ id	2	0	0	0	0	0	0	1	1,20%	98,80%										
152	GO:0070567|MF|05|cytidylyltransferase activity	model 0 ~ id	2	0	0	0	0	0	0	1	2,80%	97,20%										
164	GO:0009986|CC|02|cell surface	model 0 ~ id	2	0	0	0	0	0	0	1	2,40%	97,60%										
179	GO:0060590|MF|03|ATPase regulator activity	model 0 ~ id	2	0	0	0	0	0	0	1	2,80%	97,20%										
188	GO:0032508|BP|07|DNA duplex unwinding	model 0 ~ id	2	0	0	0	0	0	0	1	2,30%	97,70%										
217	GO:0006506|BP|06|GPI anchor biosynthetic process	model 0 ~ id	2	0	0	0	0	0	0	1	0,80%	99,20%										
219	GO:0016861|MF|04|intramolecular oxidoreductase activity, interconverting aldoses and ketoses	model 0 ~ id	2	0	0	0	0	0	0	1	1,70%	98,30%										
220	GO:0015074|BP|05|DNA integration	model 0 ~ id	2	0	0	0	0	0	0	1	1,30%	98,70%										
227	GO:0000398|BP|07|mRNA splicing, via spliceosome	model 0 ~ id	2	0	0	0	0	0	0	1	0,80%	99,20%										
230	GO:0008408|MF|06|3-5 exonuclease activity	model 0 ~ id	2	0	0	0	0	0	0	1	1,60%	98,40%										
231	GO:0046112|BP|04|nucleobase biosynthetic process	model 0 ~ id	2	0	0	0	0	0	0	1	6,40%	93,60%										
237	GO:0005249|MF|08|voltage-gated potassium channel activity	model 0 ~ id	2	0	0	0	0	0	0	1	14,80%	85,20%										
246	GO:0000105|BP|05|histidine biosynthetic process	model 0 ~ id	2	0	0	0	0	0	0	1	1,40%	98,60%										
253	GO:0046933|MF|07|proton-transporting ATP synthase activity, rotational mechanism	model 0 ~ id	2	0	0	0	0	0	0	1	1,10%	98,90%										
254	GO:0007049|BP|03|cell cycle	model 0 ~ id	2	0	0	0	0	0	0	1	3,20%	96,80%										
274	GO:0009148|BP|06|pyrimidine nucleoside triphosphate biosynthetic process	model 0 ~ id	2	0	0	0	0	0	0	1	1,30%	98,70%										
284	GO:0006184|BP|07|GTP catabolic process	model 0 ~ id	2	0	0	0	0	0	0	1	1,70%	98,30%										
302	GO:0009228|BP|05|thiamine biosynthetic process	model 0 ~ id	2	0	0	0	0	0	0	1	1,60%	98,40%										
307	GO:0048468|BP|03|cell development	model 0 ~ id	2	0	0	0	0	0	0	1	1,20%	98,80%										
335	GO:0000049|MF|05|tRNA binding	model 0 ~ id	2	0	0	0	0	0	0	1	1,20%	98,80%										
354	GO:0040007|BP|01|growth	model 0 ~ id	2	0	0	0	0	0	0	1	1,50%	98,50%										
367	GO:0019238|MF|05|cyclohydrolase activity	model 0 ~ id	2	0	0	0	0	0	0	1	1,80%	98,20%										
369	GO:0000162|BP|06|tryptophan biosynthetic process	model 0 ~ id	2	0	0	0	0	0	0	1	1,70%	98,30%										
373	GO:0030259|BP|05|lipid glycosylation	model 0 ~ id	2	0	0	0	0	0	0	1	1,30%	98,70%										
388	GO:0004812|MF|05|aminoacyl-tRNA ligase activity	model 0 ~ id	2	0	0	0	0	0	0	1	1,10%	98,90%										
66	GO:0016813|MF|04|hydrolase activity, acting on carbon-nitrogen (but not peptide) bonds, in linear amidines	model 0 ~ rus+id	2	0	0	0	0	1	0	1	2,20%	4,70%	93,10%									
216	GO:0003755|MF|04|peptidyl-prolyl cis-trans isomerase activity	model 0 ~ rus+id	2	0	0	0	0	1	0	1	3,20%	4,60%	92,30%									

Supplementary File 2

targetID	targetName	modelName	convergeFlag	age	seroT	group	gender	id	Variance Explained								
55	P10912	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	32,20%	19,00%	12,90%	1,70%	11,10%	23,10%			
67	Q6PID9	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	41,80%	5,60%	7,40%	14,80%	10,60%	19,90%			
70	P62333	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	22,40%	12,30%	7,20%	0,90%	6,10%	51,20%			
89	P55290	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	3,40%	5,70%	60,00%	2,80%	14,30%	13,90%			
159	O95490	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	4,20%	6,40%	48,00%	0,40%	26,90%	14,10%			
245	P02788	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	2,10%	3,40%	37,90%	1,40%	51,50%	3,70%			
258	P09622	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	31,30%	10,30%	9,40%	14,10%	15,10%	19,80%			
322	Q93070	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	6,50%	4,00%	68,30%	0,40%	2,80%	18,10%			
323	Q13554	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	24,50%	2,20%	68,00%	0,20%	0,30%	4,80%			
374	O00462	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	34,70%	9,00%	36,50%	0,20%	4,80%	14,90%			
383	P47813	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	9,00%	7,50%	2,30%	2,30%	46,40%	32,50%			
386	O14791	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	23,20%	6,30%	43,80%	0,80%	4,50%	21,60%			
397	O15204	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	25,50%	5,50%	34,90%	0,30%	16,20%	17,50%			
439	O75493	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	6,50%	8,50%	25,30%	31,80%	14,90%	13,00%			
505	P01344	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	28,60%	3,00%	27,20%	2,90%	8,60%	29,60%			
512	P02458	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	84,40%	0,80%	1,90%	3,80%	2,40%	6,80%			
525	P02747	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	12,10%	9,70%	42,20%	4,60%	9,90%	21,50%			
569	P05019	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	75,40%	2,50%	10,00%	1,50%	1,00%	9,50%			
638	P08174	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	12,50%	7,70%	38,40%	0,90%	9,80%	30,90%			
706	P12107	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	65,90%	2,00%	4,90%	9,10%	7,40%	10,70%			
778	P17936	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	59,80%	2,60%	22,70%	2,60%	1,30%	11,00%			
864	P28062	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	0,70%	0,50%	86,40%	0,00%	9,60%	2,70%			
897	P31948	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	12,80%	0,00%	17,00%	6,60%	31,30%	32,40%			
1097	Q03167	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	13,60%	7,10%	37,50%	0,60%	8,10%	33,10%			
1098	Q03591	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	0,40%	0,50%	96,20%	0,00%	0,20%	2,70%			
1206	Q15848	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	40,70%	1,30%	14,60%	1,80%	15,10%	26,50%			
1355	Q92859	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	2,60%	2,90%	21,20%	10,80%	19,90%	42,60%			
1357	Q92896	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	3,50%	8,90%	45,40%	0,40%	7,00%	34,80%			
1479	Q9P232	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	24,10%	4,30%	32,70%	0,70%	6,20%	32,00%			
1493	Q9UHG3	model 0 ~ age+gender+id+age*gender+age*id	2	1	0	0	1	1	3,10%	9,30%	44,50%	1,00%	5,90%	36,20%			
1	P35237	model 0 ~ age+group+gender+id+age*group+age*gender+age*id+group*gender	2	1	0	1	1	1	7,70%	0,30%	0,10%	2,20%	6,60%	0,70%	50,20%	30,10%	2,20%
104	P13942	model 0 ~ age+group+gender+id+age*group+age*gender+age*id+group*gender	2	1	0	1	1	1	77,20%	2,40%	1,90%	1,70%	2,10%	3,20%	2,40%	0,00%	9,10%
1502	Q9UK05	model 0 ~ age+group+gender+id+age*group+age*gender+age*id+group*gender	2	1	0	1	1	1	1,70%	0,10%	0,30%	66,30%	0,60%	0,10%	22,60%	0,10%	8,10%
74	Q9ULH1	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	47,60%	12,50%	17,80%	15,50%	1,90%	4,70%			
112	O75390	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	26,40%	17,10%	7,80%	7,70%	16,50%	24,50%			
166	Q9Y6E0	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	20,70%	1,20%	2,80%	8,80%	53,80%	12,70%			
181	Q96EE4	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	4,50%	26,00%	33,10%	1,40%	7,80%	27,20%			
318	Q96NZ9	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	13,50%	4,60%	57,90%	0,30%	2,60%	21,20%			
370	O00339	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	39,00%	5,50%	22,90%	0,70%	10,60%	21,30%			
582	P05186	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	7,80%	2,30%	3,10%	5,80%	79,50%	1,40%			
595	P06576	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	42,00%	0,40%	3,10%	22,40%	30,00%	2,20%			
652	P08648	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	7,30%	16,90%	13,40%	2,30%	44,00%	16,10%			
664	P09486	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	4,50%	0,70%	84,90%	0,10%	5,60%	4,30%			
764	P16152	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	11,50%	2,90%	7,60%	13,30%	9,30%	55,40%			
783	P18463	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	8,90%	6,40%	76,80%	0,30%	2,60%	5,00%			
804	P20774	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	46,20%	3,60%	30,50%	1,70%	4,10%	13,80%			
836	P23526	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	53,20%	0,00%	1,20%	6,20%	7,70%	31,70%			
886	P30460	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	9,40%	14,40%	60,40%	0,70%	4,70%	10,30%			
946	P42574	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	32,10%	0,10%	3,20%	39,00%	12,30%	13,30%			

967	P48506	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	58,80%	0,10%	6,00%	7,90%	7,50%	19,60%
984	P49773	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	32,70%	0,10%	5,20%	7,90%	22,00%	32,00%
1033	P61019	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	37,30%	8,20%	7,30%	7,20%	36,40%	3,60%
1044	P61769	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	2,70%	2,70%	81,20%	0,10%	9,00%	4,30%
1049	P62263	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	27,00%	7,80%	34,20%	6,70%	15,80%	8,50%
1161	Q14008	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	47,90%	0,00%	13,80%	37,80%	0,20%	0,30%
1166	Q14126	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	29,20%	0,80%	46,20%	3,00%	8,60%	12,30%
1217	Q16651	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	21,80%	13,50%	46,20%	2,80%	4,40%	11,40%
1271	Q6ZMJ2	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	15,70%	0,10%	16,10%	61,30%	2,90%	4,00%
1279	Q7LGC8	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	16,70%	20,70%	19,60%	2,20%	11,60%	29,20%
1296	Q86VZ4	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	24,90%	5,90%	32,70%	0,60%	17,30%	18,60%
1383	Q96NL6	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	65,10%	0,10%	1,20%	32,00%	0,30%	1,40%
1388	Q99436	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	18,40%	8,50%	10,90%	3,30%	8,50%	50,40%
1403	Q9BR76	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	24,90%	0,70%	5,10%	30,60%	25,30%	13,40%
1404	Q9BRA2	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	25,30%	4,30%	1,50%	5,40%	6,90%	56,70%
1419	Q9BYH1	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	78,70%	0,00%	4,10%	1,70%	2,70%	12,70%
1496	Q9UIJ7	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	27,20%	0,50%	5,70%	49,40%	9,60%	7,70%
1524	Q9Y2T3	model 0 ~ age+group+id+age*group+age*id	2	1	0	1	0	1	42,90%	8,90%	3,70%	22,60%	13,50%	8,50%
2	Q7LBX6	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,90%	41,10%	19,00%	32,10%		
3	Q9H4M9	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,60%	2,80%	77,20%	10,40%		
12	P08575	model 0 ~ age+id+age*id	2	1	0	0	0	1	44,30%	26,10%	6,10%	23,60%		
14	P08123	model 0 ~ age+id+age*id	2	1	0	0	0	1	66,60%	17,20%	2,10%	14,10%		
15	P08887	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,00%	77,40%	2,00%	17,70%		
16	Q12913	model 0 ~ age+id+age*id	2	1	0	0	0	1	44,50%	18,50%	10,70%	26,30%		
17	A0A087WTM	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,80%	72,60%	7,70%	13,80%		
18	Q7Z5N4	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,70%	61,10%	23,40%	6,80%		
21	P41271	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,80%	48,30%	3,70%	27,30%		
22	A0A087WU9	model 0 ~ age+id+age*id	2	1	0	0	0	1	27,30%	14,10%	26,80%	31,80%		
23	O15467	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,50%	58,30%	16,60%	15,50%		
24	Q3LXA3	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,30%	27,00%	32,40%	36,30%		
26	P07203	model 0 ~ age+id+age*id	2	1	0	0	0	1	37,10%	11,80%	13,70%	37,40%		
27	O95196	model 0 ~ age+id+age*id	2	1	0	0	0	1	69,00%	2,20%	4,10%	24,70%		
29	Q5T123	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,90%	4,80%	44,10%	40,30%		
31	P15941	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,30%	71,10%	2,60%	22,00%		
32	Q14517	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,20%	71,80%	8,40%	7,50%		
34	Q13477	model 0 ~ age+id+age*id	2	1	0	0	0	1	41,60%	41,40%	6,20%	10,80%		
36	P23470	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,30%	87,00%	0,50%	11,10%		
38	Q9Y274	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,50%	71,70%	6,00%	20,80%		
40	P01860	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,70%	55,70%	12,90%	22,60%		
42	Q9UPZ6	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,70%	70,20%	25,20%	2,90%		
43	P21802	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,00%	45,90%	22,10%	14,00%		
45	Q9BZG9	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,00%	74,80%	6,90%	13,20%		
46	Q6UXD5	model 0 ~ age+id+age*id	2	1	0	0	0	1	75,70%	6,30%	3,90%	14,10%		
47	Q16851	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,00%	43,90%	8,30%	43,70%		
48	Q15185	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,10%	4,40%	81,20%	6,30%		
51	Q9H3K6	model 0 ~ age+id+age*id	2	1	0	0	0	1	29,40%	7,70%	11,70%	51,10%		
52	Q9Y4L1	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,30%	63,50%	13,50%	17,80%		
56	P39059	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,90%	40,80%	15,70%	19,60%		
60	Q6ZRP7	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,40%	55,40%	9,00%	30,20%		
61	Q9UBW5	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,40%	9,10%	62,10%	5,50%		

62	O60613	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,60%	51,50%	32,20%	5,70%
63	P22352	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,70%	83,50%	1,70%	14,10%
64	Q16663	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,00%	62,20%	3,70%	24,10%
65	O95633	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,50%	47,20%	19,40%	27,80%
68	Q9UL46	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,80%	2,40%	32,10%	51,70%
71	Q8NDA2	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,00%	50,20%	6,40%	26,50%
75	P22061	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,20%	40,20%	8,30%	28,30%
76	P12259	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,00%	54,20%	7,90%	26,90%
77	Q8WU40	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,50%	26,90%	22,60%	36,00%
79	P33527	model 0 ~ age+id+age*id	2	1	0	0	0	1	21,60%	2,30%	31,80%	44,40%
80	P15151	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,10%	66,70%	5,30%	9,00%
81	Q4LDE5	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,50%	37,50%	16,20%	29,80%
82	Q53EL9	model 0 ~ age+id+age*id	2	1	0	0	0	1	68,00%	12,60%	6,90%	12,50%
85	Q13418	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,90%	19,30%	54,50%	15,30%
88	Q96B86	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,90%	78,90%	4,80%	11,30%
90	P06744	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,30%	10,90%	25,40%	56,50%
92	Q9UQP3	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,80%	77,30%	15,20%	4,80%
94	Q07654	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,10%	60,10%	4,90%	20,90%
95	Q8WWV6	model 0 ~ age+id+age*id	2	1	0	0	0	1	41,70%	37,50%	5,80%	14,90%
96	P00533	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,40%	22,50%	13,40%	56,70%
99	Q9UHJ6	model 0 ~ age+id+age*id	2	1	0	0	0	1	27,30%	54,30%	8,80%	9,70%
101	Q99685	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,50%	6,50%	41,70%	32,20%
103	Q9NR71	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,50%	48,10%	4,70%	30,60%
105	P04179	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,50%	23,70%	52,90%	14,90%
107	Q14242	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	75,20%	11,60%	7,70%
108	P15289	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,50%	62,10%	33,90%	0,50%
109	Q8NF91	model 0 ~ age+id+age*id	2	1	0	0	0	1	61,10%	0,90%	9,00%	29,00%
110	P20810	model 0 ~ age+id+age*id	2	1	0	0	0	1	43,90%	11,50%	7,50%	37,10%
111	Q5ZPR3	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,80%	43,00%	7,70%	30,50%
113	Q96DA0	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,30%	40,40%	10,90%	22,40%
115	P02753	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,30%	85,20%	1,30%	8,10%
116	P07359	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,50%	72,40%	6,90%	10,20%
118	Q9NZN3	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,10%	15,20%	71,80%	3,90%
119	Q12884	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	41,70%	17,60%	27,80%
120	Q16288	model 0 ~ age+id+age*id	2	1	0	0	0	1	32,00%	32,40%	9,80%	25,80%
121	Q5TFM2	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,10%	98,80%	0,20%	0,90%
124	O60610	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,20%	19,90%	51,60%	16,30%
127	P13762	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,10%	65,10%	8,00%	16,90%
128	P04440	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,10%	67,10%	1,60%	13,30%
130	Q8N307	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,20%	18,50%	42,60%	2,70%
131	Q8N149	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,80%	54,90%	12,00%	31,30%
132	Q9HBB8	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,90%	79,50%	1,00%	11,60%
133	O75023	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,00%	92,70%	1,00%	4,30%
134	Q8N6C8	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,10%	53,60%	20,70%	17,50%
138	Q9ULB1	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,30%	78,20%	10,80%	8,70%
139	A0A0U1RQQ4	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,20%	86,30%	1,10%	7,50%
141	Q9Y2D4	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,80%	41,70%	37,10%	13,40%
142	A0A0U1RRC4	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,00%	91,10%	0,40%	6,40%
143	Q9Y4C0	model 0 ~ age+id+age*id	2	1	0	0	0	1	37,20%	23,60%	10,70%	28,50%
144	A1L4H1	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,70%	67,20%	8,80%	13,30%

145	P04156	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,80%	56,90%	13,30%	19,00%
148	P54578	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,80%	27,80%	11,70%	44,70%
149	P60033	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,80%	57,20%	20,50%	11,40%
150	A6NMZ7	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,90%	61,00%	9,90%	19,20%
151	P21926	model 0 ~ age+id+age*id	2	1	0	0	0	1	30,60%	3,10%	17,30%	49,00%
152	P55145	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,50%	12,80%	52,50%	22,10%
154	P02656	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,40%	70,40%	5,30%	22,90%
155	P25325	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,60%	16,30%	21,60%	37,50%
156	P47756	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,80%	9,70%	56,70%	20,80%
158	B1ALD9	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,30%	51,00%	8,00%	17,70%
160	Q14141	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,80%	4,30%	57,80%	18,20%
162	Q86TH1	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,40%	35,80%	11,90%	47,90%
163	Q99439	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,90%	8,40%	38,30%	35,40%
165	P00736	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,60%	67,00%	9,80%	20,60%
168	P49368	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,90%	3,10%	63,60%	9,40%
169	P62987	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,90%	45,20%	8,10%	26,80%
172	P20062	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,50%	83,90%	3,80%	8,80%
173	Q15019	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,90%	11,30%	38,60%	39,20%
175	P60660	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,80%	11,70%	76,70%	1,70%
178	Q5VT82	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,10%	52,70%	13,60%	16,60%
179	Q9BXY5	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,20%	38,40%	18,40%	33,90%
182	P30626	model 0 ~ age+id+age*id	2	1	0	0	0	1	25,80%	12,90%	27,80%	33,50%
183	Q9BUL8	model 0 ~ age+id+age*id	2	1	0	0	0	1	39,10%	14,50%	13,00%	33,40%
184	Q8TEU8	model 0 ~ age+id+age*id	2	1	0	0	0	1	73,20%	6,20%	7,00%	13,60%
185	P10646	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,30%	63,30%	5,50%	15,90%
187	P99999	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,20%	21,00%	56,80%	6,00%
188	Q9UKJ1	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,30%	75,80%	20,50%	3,40%
189	P19971	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,00%	21,10%	31,30%	35,60%
190	P13798	model 0 ~ age+id+age*id	2	1	0	0	0	1	28,30%	9,10%	9,30%	53,30%
191	P48551	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	63,50%	11,40%	19,50%
193	Q92823	model 0 ~ age+id+age*id	2	1	0	0	0	1	41,60%	24,20%	8,70%	25,50%
211	D3DSM0	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,80%	29,40%	8,80%	38,10%
212	Q7Z7G0	model 0 ~ age+id+age*id	2	1	0	0	0	1	34,40%	28,90%	27,80%	9,00%
213	P02746	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,50%	48,10%	19,90%	7,50%
214	Q13557	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,70%	20,70%	22,30%	55,40%
215	Q9NQ76	model 0 ~ age+id+age*id	2	1	0	0	0	1	44,30%	29,90%	23,40%	2,50%
216	D6RAR4	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,40%	61,90%	15,20%	18,50%
217	Q9BT78	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,00%	40,50%	20,40%	20,10%
218	O94856	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,30%	30,40%	64,90%	1,40%
219	D6RE86	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,60%	49,20%	38,20%	2,00%
221	O00584	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,70%	68,50%	4,00%	20,90%
223	Q99715	model 0 ~ age+id+age*id	2	1	0	0	0	1	70,70%	9,00%	8,20%	12,10%
224	P16871	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,10%	60,40%	3,40%	34,20%
225	O94903	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,20%	56,10%	4,10%	34,60%
227	Q8TDQ0	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,40%	43,80%	41,70%	10,10%
228	Q15043	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,40%	44,10%	14,40%	27,20%
229	O75347	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,00%	5,50%	62,50%	20,90%
231	Q99952	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,20%	17,80%	31,20%	33,80%
233	P61916	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,80%	51,50%	21,70%	17,00%
234	P58215	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,40%	36,20%	13,30%	30,20%

236	P12111	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,10%	34,90%	10,00%	48,00%
238	Q16181	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,50%	1,30%	63,50%	20,70%
240	P37840	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,00%	24,00%	36,80%	17,10%
241	P22105	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,10%	49,60%	9,60%	30,60%
243	P15311	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,50%	58,60%	7,90%	19,00%
246	Q9UIA9	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,30%	5,40%	14,00%	54,20%
250	Q13822	model 0 ~ age+id+age*id	2	1	0	0	0	1	58,70%	12,70%	5,10%	23,40%
251	P10163	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,20%	63,10%	32,40%	4,40%
252	P22234	model 0 ~ age+id+age*id	2	1	0	0	0	1	35,40%	2,00%	16,20%	46,40%
253	Q9Y2E5	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,20%	59,60%	10,40%	26,80%
256	P07333	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,30%	40,20%	9,30%	41,20%
257	Q5T7F0	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	52,00%	20,20%	22,20%
259	Q9Y2Q3	model 0 ~ age+id+age*id	2	1	0	0	0	1	28,20%	11,90%	35,50%	24,40%
261	Q6ZR08	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,80%	78,40%	10,20%	7,60%
262	P54764	model 0 ~ age+id+age*id	2	1	0	0	0	1	70,60%	6,00%	12,80%	10,60%
263	Q15262	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,30%	53,30%	34,00%	3,40%
265	Q12866	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,30%	62,40%	20,90%	4,40%
266	P23528	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,30%	11,30%	41,30%	36,10%
267	Q13630	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,60%	1,80%	15,70%	45,90%
269	P13987	model 0 ~ age+id+age*id	2	1	0	0	0	1	25,80%	44,60%	9,30%	20,30%
274	Q86VB7	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,60%	50,80%	17,30%	20,30%
275	Q96BZ4	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,30%	54,70%	3,10%	5,90%
276	P55209	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,50%	26,50%	48,40%	18,50%
277	Q9UBP4	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,40%	61,80%	29,40%	7,40%
278	Q9HC38	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,80%	21,40%	9,40%	54,40%
279	Q15257	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,60%	42,00%	22,60%	28,80%
280	P43487	model 0 ~ age+id+age*id	2	1	0	0	0	1	35,90%	16,90%	14,80%	32,30%
281	Q8N4A0	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,40%	68,50%	12,90%	9,10%
282	Q99435	model 0 ~ age+id+age*id	2	1	0	0	0	1	69,30%	17,80%	5,60%	7,30%
283	Q9H159	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,60%	55,40%	5,40%	27,60%
284	P36873	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,60%	2,90%	47,00%	27,50%
285	P54819	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,90%	6,70%	62,10%	7,20%
286	P50281	model 0 ~ age+id+age*id	2	1	0	0	0	1	31,40%	15,10%	20,50%	33,00%
288	Q9HCK4	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,70%	28,90%	16,50%	40,90%
289	O00461	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,20%	51,10%	25,60%	8,20%
293	P59998	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,10%	15,90%	62,00%	9,90%
295	P02786	model 0 ~ age+id+age*id	2	1	0	0	0	1	29,00%	10,10%	11,00%	49,90%
296	Q9NY33	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,80%	11,80%	31,00%	47,40%
297	O95998	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,10%	57,90%	23,30%	13,80%
300	Q9UBX5	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,80%	40,00%	28,80%	16,30%
301	P60900	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,90%	40,30%	10,20%	44,60%
302	P07942	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,10%	45,00%	10,60%	28,30%
303	P26927	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,80%	88,90%	1,60%	4,80%
304	P49747	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,10%	29,20%	15,40%	40,40%
305	O00560	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,70%	63,20%	4,00%	23,10%
306	Q9HDC9	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,90%	59,90%	7,70%	17,60%
307	P16070	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,90%	30,80%	8,80%	44,60%
309	Q5TCQ3	model 0 ~ age+id+age*id	2	1	0	0	0	1	53,20%	13,70%	13,60%	19,50%
310	P03952	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,20%	80,20%	4,60%	11,00%
311	O76061	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,40%	29,90%	30,10%	21,60%

312	P01130	model 0 ~ age+id+age*id	2	1	0	0	0	1	32,10%	31,00%	15,70%	21,10%
313	Q8TF62	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,10%	39,10%	21,40%	24,40%
314	Q13449	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,00%	17,40%	17,40%	45,20%
316	P06865	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,00%	42,40%	17,20%	24,30%
319	P09493	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,80%	28,20%	49,70%	17,40%
320	H7BZ55	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,00%	7,50%	48,50%	41,00%
324	Q96JN2	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,90%	44,00%	6,10%	42,00%
325	H7C5R1	model 0 ~ age+id+age*id	2	1	0	0	0	1	31,70%	11,60%	21,90%	34,80%
326	O15394	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,80%	63,40%	27,40%	5,40%
327	Q13404	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,00%	7,80%	19,40%	52,80%
329	P22607	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,20%	60,70%	24,90%	2,10%
330	O00233	model 0 ~ age+id+age*id	2	1	0	0	0	1	47,10%	2,20%	13,40%	37,20%
332	P49913	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,40%	45,50%	6,70%	36,50%
333	O14618	model 0 ~ age+id+age*id	2	1	0	0	0	1	32,70%	11,40%	25,40%	30,40%
334	Q9NPR2	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,30%	47,40%	18,20%	21,10%
335	P54108	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,20%	66,80%	5,60%	11,50%
336	P22455	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,60%	41,20%	24,10%	30,10%
338	P30046	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,90%	81,10%	1,80%	10,20%
339	Q9NTK5	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,40%	13,70%	13,10%	50,70%
340	P78509	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,00%	60,30%	12,20%	18,40%
344	P19105	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,20%	6,10%	47,90%	40,80%
346	O75144	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,50%	67,70%	5,60%	22,20%
347	Q8IYT4	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,50%	6,40%	37,70%	38,40%
350	P14314	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,70%	44,90%	12,30%	31,20%
351	Q99497	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,80%	7,60%	43,90%	30,70%
354	Q8IUL8	model 0 ~ age+id+age*id	2	1	0	0	0	1	27,70%	11,70%	26,60%	34,00%
356	P00746	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,60%	39,60%	7,50%	16,40%
361	Q03405	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,30%	81,20%	3,70%	11,80%
362	P08637	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,60%	74,00%	5,40%	10,00%
363	O75015	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,80%	78,20%	1,60%	9,30%
364	O00151	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,40%	10,20%	60,40%	20,00%
367	O00194	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,00%	3,20%	87,30%	7,50%
369	O00299	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,90%	10,80%	51,70%	26,50%
371	O00391	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,60%	85,00%	0,90%	10,50%
372	O00429	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,50%	7,20%	67,10%	14,10%
373	O00451	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,20%	32,30%	15,90%	33,60%
378	O00592	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,00%	67,90%	8,40%	22,80%
380	O00754	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,50%	86,20%	6,10%	4,30%
381	O14498	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,10%	69,90%	5,50%	11,50%
382	O14594	model 0 ~ age+id+age*id	2	1	0	0	0	1	70,50%	2,80%	9,50%	17,20%
385	O14745	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,20%	30,30%	25,50%	35,10%
387	O14793	model 0 ~ age+id+age*id	2	1	0	0	0	1	48,00%	7,90%	15,30%	28,80%
388	O14818	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,70%	15,60%	16,00%	47,80%
390	O14960	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,60%	81,20%	1,70%	14,50%
391	O15020	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,80%	60,50%	29,30%	6,40%
393	O15117	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,60%	3,20%	33,80%	39,50%
394	O15143	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,80%	8,10%	40,90%	37,10%
395	O15144	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,40%	4,30%	77,20%	7,10%
396	O15145	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,50%	47,90%	42,20%	5,40%
399	O15232	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,30%	21,80%	15,80%	38,00%

400	Q05BJ3	model 0 ~ age+id+age*id	2	1	0	0	0	1	45,40%	22,10%	7,10%	25,40%
401	O15335	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,90%	55,40%	7,30%	30,40%
403	O15438	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,70%	52,10%	6,70%	32,50%
404	O15511	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,70%	7,10%	85,30%	2,00%
405	O43157	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,20%	57,30%	11,60%	21,90%
406	O43278	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,30%	49,20%	16,00%	26,50%
407	O43280	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,50%	44,90%	15,70%	20,00%
408	O43396	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,30%	15,00%	36,90%	29,90%
410	O43488	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,50%	54,40%	16,30%	19,80%
411	O43505	model 0 ~ age+id+age*id	2	1	0	0	0	1	56,40%	18,20%	5,40%	20,00%
412	O43529	model 0 ~ age+id+age*id	2	1	0	0	0	1	44,90%	17,90%	9,30%	27,90%
413	O43665	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,00%	11,40%	77,60%	3,00%
414	O43707	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,30%	6,00%	56,60%	23,10%
416	O43852	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,90%	45,40%	9,50%	33,30%
417	O43866	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,50%	65,00%	12,80%	14,80%
418	O43895	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,20%	57,00%	0,90%	5,80%
421	O60234	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,20%	6,60%	41,90%	36,40%
423	O60493	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,50%	9,00%	73,90%	5,50%
424	O60664	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,20%	48,20%	31,60%	20,10%
425	O60667	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,60%	58,40%	6,40%	31,60%
428	O60888	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,90%	92,40%	0,30%	4,40%
430	O75083	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,30%	7,90%	57,60%	23,20%
431	O75116	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,50%	3,50%	24,20%	47,80%
433	O75223	model 0 ~ age+id+age*id	2	1	0	0	0	1	29,90%	3,60%	8,70%	57,70%
434	O75326	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,50%	38,50%	26,90%	18,10%
440	O75509	model 0 ~ age+id+age*id	2	1	0	0	0	1	37,90%	22,30%	10,40%	29,40%
441	O75558	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,80%	7,70%	80,00%	10,50%
442	O75563	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,30%	3,40%	18,40%	53,90%
444	O75636	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,60%	71,80%	8,50%	17,10%
445	O75752	model 0 ~ age+id+age*id	2	1	0	0	0	1	41,10%	23,40%	16,30%	19,20%
446	O75874	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,30%	42,30%	38,20%	12,30%
448	O75976	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,00%	58,10%	41,50%	0,40%
449	O76074	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,00%	7,40%	82,40%	8,20%
451	O94898	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,20%	60,60%	21,70%	3,50%
452	O94910	model 0 ~ age+id+age*id	2	1	0	0	0	1	21,10%	7,30%	50,10%	21,50%
453	O94919	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,90%	51,30%	20,30%	20,60%
454	O94985	model 0 ~ age+id+age*id	2	1	0	0	0	1	76,10%	4,40%	7,90%	11,60%
455	O95274	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,50%	26,40%	30,60%	42,50%
456	O95302	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,20%	21,10%	23,10%	40,60%
458	O95393	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,30%	3,50%	41,30%	52,80%
459	Q5H8X8	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,70%	11,50%	17,60%	58,10%
462	O95479	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,80%	90,20%	4,00%	2,90%
463	O95497	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,60%	92,20%	1,30%	4,00%
464	O95502	model 0 ~ age+id+age*id	2	1	0	0	0	1	84,40%	3,50%	6,30%	5,90%
465	O95810	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,60%	11,50%	71,00%	9,90%
467	O95897	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,40%	67,20%	9,50%	9,90%
468	O95980	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,00%	59,70%	19,60%	9,70%
469	P00325	model 0 ~ age+id+age*id	2	1	0	0	0	1	33,00%	11,90%	41,10%	14,00%
470	P00338	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,00%	26,90%	65,10%	2,00%
471	P00352	model 0 ~ age+id+age*id	2	1	0	0	0	1	49,00%	17,00%	7,40%	26,50%

473	P00390	model 0 ~ age+id+age*id	2	1	0	0	0	1	34,10%	35,70%	18,40%	11,80%
474	P00441	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,30%	10,90%	21,00%	43,80%
475	P00450	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	76,20%	13,50%	4,80%
476	P00451	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,20%	88,90%	0,80%	9,10%
478	P00491	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,30%	7,90%	45,80%	35,00%
479	P00492	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,40%	11,50%	8,60%	43,50%
481	P00568	model 0 ~ age+id+age*id	2	1	0	0	0	1	42,10%	5,00%	11,50%	41,40%
484	P00740	model 0 ~ age+id+age*id	2	1	0	0	0	1	28,70%	33,60%	11,60%	26,10%
485	P00742	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,10%	36,10%	14,70%	41,00%
486	P00747	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,20%	60,10%	15,50%	19,20%
487	P00748	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,90%	92,20%	1,00%	5,90%
489	P00915	model 0 ~ age+id+age*id	2	1	0	0	0	1	53,30%	23,00%	4,60%	19,10%
490	P00918	model 0 ~ age+id+age*id	2	1	0	0	0	1	50,60%	12,70%	6,70%	29,90%
491	P00995	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,60%	19,90%	10,20%	45,30%
495	P01019	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,10%	78,30%	8,10%	11,50%
496	P01023	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,60%	95,70%	0,50%	3,20%
497	P01024	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,50%	33,20%	16,20%	31,10%
498	P01031	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,70%	26,80%	27,90%	34,60%
499	P01033	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,50%	28,30%	9,50%	51,60%
500	P01034	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,90%	44,20%	18,90%	17,00%
504	P01137	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,00%	53,40%	20,40%	19,20%
507	P01833	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,10%	51,90%	10,50%	23,50%
509	P02042	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,10%	79,60%	3,80%	9,40%
511	P02452	model 0 ~ age+id+age*id	2	1	0	0	0	1	63,70%	11,30%	3,80%	21,20%
513	P02461	model 0 ~ age+id+age*id	2	1	0	0	0	1	73,40%	12,80%	3,30%	10,50%
516	P02647	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,70%	55,70%	14,20%	25,40%
517	P02649	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,50%	74,10%	4,20%	18,30%
518	P02652	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,70%	38,20%	6,30%	28,80%
524	P02745	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,50%	72,20%	4,30%	10,00%
526	P02748	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,00%	25,70%	37,90%	24,30%
527	P02749	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,10%	72,20%	6,70%	7,00%
530	P02760	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,40%	47,80%	15,90%	19,80%
532	P02765	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,20%	67,50%	7,10%	14,10%
535	P02775	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,30%	43,20%	8,70%	34,80%
536	P02776	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,80%	62,80%	13,10%	19,30%
537	P02787	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,40%	88,40%	3,80%	7,40%
539	P02792	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,20%	61,70%	4,00%	27,10%
540	P02818	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,80%	38,20%	18,00%	23,00%
541	P03950	model 0 ~ age+id+age*id	2	1	0	0	0	1	41,30%	31,00%	4,00%	23,70%
542	P03951	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,90%	62,10%	23,20%	11,90%
544	P03973	model 0 ~ age+id+age*id	2	1	0	0	0	1	27,90%	34,70%	10,20%	27,20%
546	P04004	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,10%	47,30%	12,30%	18,30%
547	P04040	model 0 ~ age+id+age*id	2	1	0	0	0	1	50,40%	13,60%	9,10%	26,90%
548	P04066	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,50%	95,50%	0,20%	3,90%
551	P04085	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,10%	76,00%	2,00%	18,90%
552	P04114	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,80%	66,00%	5,30%	21,90%
554	P04180	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,10%	48,10%	33,50%	7,30%
556	P04217	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,60%	87,60%	1,60%	8,20%
557	P04222	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,80%	83,30%	7,40%	3,40%
561	P04278	model 0 ~ age+id+age*id	2	1	0	0	0	1	41,20%	37,20%	12,40%	9,30%

562	P04406	model 0 ~ age+id+age*id	2	1	0	0	0	1	42,50%	16,60%	9,90%	31,10%
564	P04439	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,40%	76,90%	1,40%	14,40%
565	P04745	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,10%	62,80%	9,70%	10,40%
566	P04746	model 0 ~ age+id+age*id	2	1	0	0	0	1	32,50%	58,60%	2,50%	6,40%
567	P04792	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,00%	32,70%	15,80%	42,60%
571	P05060	model 0 ~ age+id+age*id	2	1	0	0	0	1	29,70%	47,70%	5,70%	16,90%
573	P05067	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	64,70%	5,30%	24,50%
574	P05089	model 0 ~ age+id+age*id	2	1	0	0	0	1	39,00%	3,60%	11,50%	45,90%
575	P05106	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,40%	3,60%	74,50%	10,50%
577	P05121	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,70%	49,80%	30,90%	15,60%
578	P05154	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,70%	66,60%	9,40%	11,30%
579	P05155	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,30%	52,20%	10,20%	13,40%
580	P05160	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	46,70%	11,00%	29,50%
583	P05362	model 0 ~ age+id+age*id	2	1	0	0	0	1	25,50%	48,50%	6,60%	19,40%
585	P05534	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,80%	94,30%	0,40%	2,50%
586	P05543	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,10%	77,90%	2,10%	16,90%
587	P05546	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,90%	84,50%	5,30%	7,20%
588	P05556	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,20%	9,00%	24,00%	40,70%
590	P06132	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,90%	28,20%	29,50%	34,40%
591	P06276	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,80%	71,00%	13,00%	14,10%
594	P06396	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,10%	71,50%	2,50%	14,90%
598	P06703	model 0 ~ age+id+age*id	2	1	0	0	0	1	53,40%	14,00%	18,50%	14,20%
599	P06727	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,50%	35,70%	7,20%	43,60%
600	P06732	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,90%	29,30%	15,20%	39,70%
601	P06733	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,40%	11,60%	63,40%	19,60%
602	P06737	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,30%	23,00%	26,70%	44,10%
603	P06753	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,70%	6,10%	49,20%	32,00%
605	P06756	model 0 ~ age+id+age*id	2	1	0	0	0	1	27,40%	29,50%	20,70%	22,40%
606	P06858	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,80%	38,30%	11,20%	41,70%
608	P07195	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,50%	18,80%	53,70%	5,00%
609	P07225	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,20%	33,20%	28,70%	29,90%
610	P07237	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,20%	26,20%	62,30%	10,20%
611	P07307	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,30%	62,20%	12,80%	13,60%
612	P07339	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,60%	57,00%	2,70%	20,70%
614	P07357	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,10%	55,40%	22,90%	16,60%
616	P07360	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,80%	59,30%	10,20%	16,60%
617	P07384	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,60%	19,60%	48,30%	22,60%
620	P07476	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,80%	55,40%	7,40%	27,40%
623	P07686	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,80%	16,20%	10,80%	56,20%
625	P07737	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,70%	6,80%	58,30%	21,20%
626	P07738	model 0 ~ age+id+age*id	2	1	0	0	0	1	49,10%	5,30%	13,60%	32,10%
630	P07902	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,60%	0,90%	96,20%	1,20%
631	P07911	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,50%	73,80%	6,00%	14,70%
632	P07949	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,50%	54,10%	25,90%	15,40%
633	P07954	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,50%	8,80%	9,80%	62,80%
634	P07996	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,60%	62,90%	21,60%	12,90%
635	P07998	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,00%	34,30%	4,80%	25,00%
636	P08118	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,20%	29,60%	24,80%	31,40%
637	P08133	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,10%	9,80%	21,80%	48,30%
639	P08185	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,10%	51,10%	5,50%	21,40%

641	P08253	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,50%	27,80%	7,80%	49,00%
642	P08294	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,20%	51,90%	7,00%	26,80%
643	P08493	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	67,20%	9,30%	10,60%
644	P08514	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,20%	10,50%	64,40%	19,90%
645	P08519	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,10%	95,70%	0,10%	2,00%
646	P08567	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,70%	4,20%	75,50%	5,60%
647	P08571	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,20%	60,10%	27,70%	4,00%
648	P08572	model 0 ~ age+id+age*id	2	1	0	0	0	1	34,30%	1,50%	35,50%	28,70%
649	P08581	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,30%	66,90%	14,50%	15,30%
650	P08582	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,60%	63,00%	3,70%	16,70%
651	P08603	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,00%	26,50%	50,00%	18,40%
653	P08670	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,00%	17,00%	32,80%	40,10%
654	P08697	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,40%	65,80%	16,90%	12,00%
655	P08709	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,20%	87,50%	1,10%	9,10%
656	P08758	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,30%	20,60%	26,80%	39,30%
657	P08833	model 0 ~ age+id+age*id	2	1	0	0	0	1	28,60%	14,00%	13,10%	44,40%
659	P09172	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,40%	79,00%	4,00%	2,70%
660	P09211	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,20%	20,40%	57,10%	10,40%
663	P09467	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,80%	39,20%	22,40%	36,60%
665	P09493	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,70%	11,10%	54,30%	22,90%
666	P09525	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,50%	19,80%	33,30%	33,40%
671	P09972	model 0 ~ age+id+age*id	2	1	0	0	0	1	65,30%	23,90%	3,60%	7,10%
674	P0DJD9	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,00%	44,60%	13,90%	40,40%
675	P0DJI8	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	57,60%	5,50%	31,30%
676	P10124	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,50%	40,10%	49,90%	6,50%
677	P10153	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,50%	70,00%	26,20%	1,30%
679	P10451	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,70%	38,20%	25,30%	12,90%
680	P10586	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,40%	60,30%	13,60%	21,60%
681	P10599	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,80%	62,40%	12,50%	17,30%
682	P10619	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,40%	21,90%	13,50%	44,30%
683	P10643	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,30%	59,10%	19,10%	13,50%
684	P10644	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,40%	21,20%	25,10%	35,30%
685	P10645	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,80%	5,80%	41,60%	37,70%
686	P10720	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,70%	16,60%	18,20%	59,50%
687	P10721	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,80%	50,20%	10,30%	34,70%
688	P10768	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	43,30%	14,80%	36,40%
690	P10915	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,70%	39,30%	13,80%	35,20%
691	P11021	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,60%	39,70%	5,50%	38,20%
692	P11047	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,70%	24,20%	8,60%	40,50%
694	P11150	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,00%	85,10%	2,50%	8,40%
696	P11216	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,30%	14,80%	49,20%	24,70%
697	P11226	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,90%	96,60%	0,10%	2,40%
698	P11279	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,80%	46,80%	18,20%	27,20%
701	P11684	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,30%	48,30%	15,80%	30,60%
702	P11717	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,20%	40,10%	18,60%	28,20%
703	P11766	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,10%	5,10%	53,60%	26,20%
704	P12081	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,70%	0,30%	89,00%	9,00%
707	P12109	model 0 ~ age+id+age*id	2	1	0	0	0	1	62,40%	0,90%	11,40%	25,30%
708	P12110	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,40%	48,10%	2,40%	23,10%
709	P12110	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,50%	6,00%	39,90%	31,60%

710	P12111	model 0 ~ age+id+age*id	2	1	0	0	0	1	46,30%	21,60%	9,80%	22,20%
712	P12277	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,20%	72,60%	9,60%	6,60%
713	P12318	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,20%	80,30%	2,70%	7,80%
714	P12429	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,80%	4,90%	43,10%	40,20%
715	P12814	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,80%	9,40%	57,90%	20,00%
716	P12821	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,40%	79,10%	2,90%	13,60%
720	P13473	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,50%	73,70%	6,90%	16,90%
721	P13489	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,80%	24,30%	10,50%	44,40%
722	P13497	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,90%	41,20%	13,30%	28,60%
723	P13591	model 0 ~ age+id+age*id	2	1	0	0	0	1	30,80%	31,50%	22,30%	15,40%
724	P13611	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,80%	47,90%	14,70%	28,60%
725	P13639	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,50%	15,40%	26,50%	50,70%
726	P13667	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,30%	4,30%	89,00%	2,40%
727	P13671	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,60%	46,80%	13,20%	28,40%
730	P13688	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,60%	77,10%	4,90%	14,40%
732	P13716	model 0 ~ age+id+age*id	2	1	0	0	0	1	45,00%	16,30%	15,50%	23,20%
733	P13727	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,10%	16,80%	33,20%	49,80%
734	P13796	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,60%	28,00%	13,40%	39,00%
735	P13797	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,40%	52,00%	10,60%	20,00%
736	P13929	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,60%	8,90%	26,80%	62,80%
737	P14151	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,50%	52,50%	23,20%	8,80%
738	P14174	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,10%	15,00%	48,60%	30,20%
742	P14543	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,80%	54,10%	10,50%	8,60%
744	P14618	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,70%	42,80%	39,00%	6,40%
745	P14618	model 0 ~ age+id+age*id	2	1	0	0	0	1	57,70%	2,70%	22,00%	17,60%
748	P14868	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,20%	51,30%	32,50%	4,90%
750	P15085	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,30%	5,10%	24,80%	68,80%
751	P15086	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,70%	19,50%	23,40%	50,40%
752	P15090	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,30%	2,10%	39,00%	45,60%
753	P15144	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,10%	61,70%	9,10%	13,10%
754	P63000	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,60%	6,60%	89,30%	0,50%
755	P15169	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,50%	73,40%	7,50%	14,50%
756	P15291	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,10%	48,90%	16,70%	29,30%
757	P15374	model 0 ~ age+id+age*id	2	1	0	0	0	1	44,60%	2,20%	28,30%	24,90%
758	P15509	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,70%	87,60%	2,70%	8,00%
759	P15907	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,70%	87,20%	1,60%	8,50%
762	P16083	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,10%	88,70%	1,20%	8,00%
763	P16109	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,40%	68,90%	4,10%	20,60%
765	P16233	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,30%	83,90%	11,30%	3,40%
768	P16581	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,60%	81,40%	3,20%	10,80%
769	P16930	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,30%	70,60%	7,70%	11,40%
770	P17050	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,40%	62,60%	7,30%	23,70%
771	P17066	model 0 ~ age+id+age*id	2	1	0	0	0	1	21,00%	28,90%	9,70%	40,40%
772	P17174	model 0 ~ age+id+age*id	2	1	0	0	0	1	35,40%	5,10%	23,20%	36,40%
773	P17301	model 0 ~ age+id+age*id	2	1	0	0	0	1	55,60%	9,20%	11,10%	24,10%
774	P17655	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,60%	78,20%	9,90%	8,30%
775	P17813	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,50%	35,20%	15,40%	37,90%
776	P17900	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,90%	22,90%	24,30%	45,00%
777	P17927	model 0 ~ age+id+age*id	2	1	0	0	0	1	40,10%	40,70%	5,30%	14,00%
779	P17987	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,80%	2,50%	51,10%	32,60%

780	P18065	model 0 ~ age+id+age*id	2	1	0	0	0	1	50,40%	9,30%	24,00%	16,30%
781	P18206	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,40%	3,30%	62,50%	19,80%
784	P18669	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,90%	4,60%	52,30%	35,20%
785	P18850	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,80%	17,30%	24,70%	38,30%
786	P19021	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,40%	48,70%	21,70%	25,20%
787	P19022	model 0 ~ age+id+age*id	2	1	0	0	0	1	53,50%	11,60%	10,20%	24,70%
788	P19320	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,90%	54,10%	24,90%	2,20%
792	P19823	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,10%	69,60%	10,50%	12,80%
793	P19827	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,40%	81,10%	6,20%	8,30%
794	P20023	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	58,50%	6,30%	22,20%
795	P20023	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,50%	13,00%	27,10%	43,40%
800	P20340	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,90%	1,80%	85,10%	7,20%
802	P20701	model 0 ~ age+id+age*id	2	1	0	0	0	1	34,20%	28,30%	29,50%	8,00%
803	P20742	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,60%	79,20%	15,10%	5,10%
805	P20827	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,40%	35,00%	19,00%	19,50%
808	P20908	model 0 ~ age+id+age*id	2	1	0	0	0	1	57,50%	18,30%	5,20%	19,00%
809	P20933	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,00%	61,00%	3,40%	29,60%
810	P21291	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	7,40%	69,10%	10,60%
811	P21333	model 0 ~ age+id+age*id	2	1	0	0	0	1	31,50%	10,90%	46,00%	11,60%
813	P21695	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,20%	37,00%	18,50%	43,30%
815	P21810	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,80%	57,10%	9,30%	26,70%
818	P22304	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,90%	28,90%	17,60%	45,60%
820	P22392	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,20%	13,60%	19,50%	48,70%
822	P22692	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,00%	30,60%	9,90%	40,40%
823	P22792	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,50%	53,10%	12,10%	23,30%
824	P22891	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,20%	88,30%	2,50%	7,00%
825	P22897	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,90%	41,30%	38,00%	13,80%
827	P23142	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,80%	29,00%	14,60%	29,60%
828	P23142	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,90%	36,00%	4,50%	40,60%
829	P23229	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,50%	5,90%	19,20%	50,40%
830	P23284	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,70%	15,70%	65,00%	8,60%
831	P23381	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,70%	25,50%	38,60%	27,20%
832	P23435	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,30%	75,20%	4,30%	15,30%
833	P23467	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,50%	72,30%	20,90%	5,30%
835	P23471	model 0 ~ age+id+age*id	2	1	0	0	0	1	25,90%	34,00%	18,50%	21,50%
837	P24043	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,10%	15,20%	18,70%	63,00%
839	P24387	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,10%	61,30%	10,80%	27,90%
840	P24592	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,50%	38,00%	11,40%	24,10%
841	P24593	model 0 ~ age+id+age*id	2	1	0	0	0	1	58,80%	10,30%	8,60%	22,20%
842	P24666	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,60%	42,70%	23,90%	17,90%
843	P24821	model 0 ~ age+id+age*id	2	1	0	0	0	1	31,10%	23,30%	14,40%	31,30%
845	P25311	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,30%	55,80%	24,80%	4,10%
849	P25788	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,30%	19,20%	17,20%	58,30%
852	P26038	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,30%	10,60%	65,60%	16,40%
853	P26447	model 0 ~ age+id+age*id	2	1	0	0	0	1	44,80%	0,80%	27,40%	27,00%
854	P26572	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,90%	42,30%	13,10%	35,80%
856	P26992	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,30%	55,30%	15,90%	8,50%
857	P27169	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,10%	52,90%	8,60%	29,40%
858	P27348	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,00%	2,20%	60,70%	29,20%
859	P27487	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,60%	64,30%	5,00%	21,00%

860	P27797	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,30%	11,80%	79,40%	6,50%
861	P27824	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	64,80%	7,80%	21,80%
862	P27918	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,00%	55,30%	8,20%	22,50%
863	P27930	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,80%	52,00%	8,60%	25,60%
867	P28072	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,80%	25,80%	27,20%	34,20%
868	P28074	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,70%	22,20%	38,40%	24,70%
869	P28799	model 0 ~ age+id+age*id	2	1	0	0	0	1	30,40%	28,80%	6,00%	34,80%
871	P29218	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,20%	23,30%	39,60%	28,90%
872	P29279	model 0 ~ age+id+age*id	2	1	0	0	0	1	30,60%	17,30%	16,10%	36,00%
875	P29622	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,40%	80,50%	5,50%	11,60%
877	P30041	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,90%	24,20%	14,50%	24,40%
878	P30043	model 0 ~ age+id+age*id	2	1	0	0	0	1	51,80%	15,30%	6,50%	26,40%
879	P30044	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,40%	66,90%	27,20%	4,40%
880	P30048	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,40%	74,40%	6,20%	15,10%
881	P30085	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,50%	12,90%	45,40%	34,20%
882	P30086	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,90%	6,70%	24,20%	44,20%
883	P30101	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,80%	6,10%	74,90%	11,20%
884	P30153	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,60%	17,50%	16,00%	48,90%
885	P30405	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,60%	5,30%	83,50%	1,60%
887	P30508	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,30%	97,10%	0,20%	1,40%
888	P30530	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,30%	61,10%	5,80%	16,80%
889	P30740	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,20%	6,60%	63,60%	15,70%
890	P31146	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,60%	0,50%	75,30%	10,60%
892	P31153	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,30%	30,70%	45,30%	12,70%
893	P31939	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,70%	8,30%	28,80%	42,30%
895	P31946	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,60%	6,10%	45,20%	36,20%
896	P31947	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,40%	6,00%	67,70%	10,00%
899	P32004	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,30%	57,10%	6,70%	26,00%
900	P32119	model 0 ~ age+id+age*id	2	1	0	0	0	1	52,40%	11,70%	7,20%	28,70%
903	P32942	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,20%	47,50%	9,70%	19,60%
904	P33151	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,90%	75,20%	4,60%	14,30%
906	P34059	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,60%	66,80%	8,20%	12,40%
907	P34096	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,60%	63,10%	6,90%	26,40%
909	P35052	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,80%	50,40%	26,30%	16,60%
911	P35247	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,70%	66,00%	3,60%	25,70%
912	P35442	model 0 ~ age+id+age*id	2	1	0	0	0	1	45,20%	12,40%	9,70%	32,60%
913	P35443	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,40%	19,00%	10,00%	47,50%
916	P35579	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,60%	11,70%	60,00%	7,80%
920	P35858	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,70%	67,70%	0,50%	5,20%
922	P36222	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,50%	48,40%	9,40%	33,70%
924	P36871	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,80%	25,20%	64,60%	6,40%
925	P36955	model 0 ~ age+id+age*id	2	1	0	0	0	1	54,90%	26,70%	8,80%	9,50%
926	P36959	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,30%	9,30%	34,00%	47,40%
929	P37802	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,30%	11,40%	58,00%	14,30%
932	P39060	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,70%	39,50%	12,80%	27,00%
935	P40197	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,70%	42,10%	17,90%	32,30%
938	P40925	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,80%	13,50%	39,40%	34,30%
939	P40926	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,90%	9,90%	69,30%	3,00%
940	P40967	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,00%	39,10%	11,80%	40,10%
941	P41222	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,90%	34,60%	11,80%	33,60%

943	P41240	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,80%	24,30%	21,30%	35,50%
944	P41250	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,10%	2,00%	24,40%	58,50%
945	P42126	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,00%	61,40%	26,30%	6,20%
947	P42785	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,90%	77,50%	2,00%	14,70%
948	P43034	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,00%	7,30%	43,90%	40,70%
949	P43121	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,30%	44,00%	4,50%	33,20%
951	P43251	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,50%	90,00%	1,60%	6,80%
953	P43652	model 0 ~ age+id+age*id	2	1	0	0	0	1	51,10%	24,30%	5,00%	19,60%
954	P45877	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,50%	89,40%	0,80%	8,30%
955	P45974	model 0 ~ age+id+age*id	2	1	0	0	0	1	31,80%	11,20%	13,50%	43,50%
958	P46531	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,10%	64,80%	6,60%	20,50%
960	P48052	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,20%	57,60%	9,60%	18,60%
961	P48059	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,30%	17,90%	60,30%	10,40%
963	P48163	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,60%	63,40%	14,10%	19,90%
965	P48357	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,60%	38,00%	12,00%	23,40%
966	P48426	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,60%	14,40%	47,30%	22,70%
968	P48637	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,20%	64,20%	8,90%	22,70%
969	P48723	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	53,80%	5,40%	27,80%
970	P48735	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,30%	12,30%	55,00%	9,50%
971	P48740	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,50%	55,30%	6,10%	19,10%
972	P48740	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,90%	43,60%	22,10%	24,50%
973	P48745	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,00%	5,80%	21,60%	61,60%
974	P48960	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,10%	55,20%	7,60%	33,00%
975	P49247	model 0 ~ age+id+age*id	2	1	0	0	0	1	39,50%	7,10%	18,60%	34,80%
977	P49407	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,70%	13,20%	51,20%	20,90%
980	P49593	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,70%	0,50%	85,00%	5,80%
981	P49641	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,30%	84,50%	13,60%	1,70%
983	P49746	model 0 ~ age+id+age*id	2	1	0	0	0	1	39,30%	15,40%	10,20%	35,00%
986	P50395	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,90%	4,60%	52,20%	33,30%
988	P50502	model 0 ~ age+id+age*id	2	1	0	0	0	1	28,70%	13,60%	31,10%	26,60%
989	P50552	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,80%	9,70%	44,20%	32,30%
990	P50990	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,20%	1,90%	59,40%	28,50%
991	P51149	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,20%	5,40%	80,70%	4,60%
992	P51452	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,10%	20,10%	66,60%	8,20%
993	P51693	model 0 ~ age+id+age*id	2	1	0	0	0	1	56,50%	19,70%	5,40%	18,40%
997	P52565	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,50%	2,70%	70,40%	19,40%
998	P52566	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,00%	9,50%	42,70%	37,90%
1000	P52790	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	38,50%	13,70%	35,00%
1002	P52848	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,70%	52,30%	7,60%	21,50%
1003	P52888	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,00%	63,60%	5,90%	25,50%
1004	P52907	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,70%	1,10%	62,20%	23,00%
1005	P53004	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,80%	12,80%	17,40%	45,90%
1006	P53396	model 0 ~ age+id+age*id	2	1	0	0	0	1	46,70%	8,80%	16,60%	27,90%
1008	P54289	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	49,50%	9,40%	28,20%
1010	P54727	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,10%	8,00%	13,60%	71,40%
1011	P54760	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,90%	32,20%	18,30%	37,70%
1012	P54802	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,70%	68,50%	3,20%	16,70%
1016	P55058	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,80%	63,50%	10,50%	16,20%
1018	P55103	model 0 ~ age+id+age*id	2	1	0	0	0	1	34,80%	14,80%	5,50%	44,90%
1019	P55268	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,90%	37,70%	16,60%	22,70%

1020	P55285	model 0 ~ age+id+age*id	2	1	0	0	0	1	27,90%	34,10%	7,70%	30,30%
1021	P55287	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,00%	42,70%	34,80%	2,50%
1023	P55957	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,00%	25,20%	33,50%	31,30%
1024	P56199	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,60%	13,40%	35,60%	46,40%
1025	P58546	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,00%	1,70%	72,90%	12,50%
1027	P60022	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,80%	34,60%	6,70%	40,90%
1028	P60174	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,30%	2,60%	47,40%	40,80%
1029	P60709	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,40%	7,90%	57,10%	22,60%
1032	P60981	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,50%	5,90%	46,80%	33,80%
1034	P61020	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,40%	5,20%	93,60%	0,80%
1037	P61088	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,20%	6,70%	31,00%	47,20%
1038	P61106	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,30%	16,80%	45,80%	18,10%
1039	P61158	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,50%	8,50%	65,50%	16,50%
1040	P61160	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,40%	12,30%	58,60%	18,70%
1042	P61224	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,30%	35,20%	44,90%	7,60%
1045	P61970	model 0 ~ age+id+age*id	2	1	0	0	0	1	34,20%	6,30%	25,50%	34,00%
1046	P61981	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,80%	6,00%	72,30%	16,90%
1048	P62258	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,70%	7,60%	48,20%	37,60%
1050	P62328	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,80%	8,80%	64,20%	20,30%
1052	P62820	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,50%	81,40%	5,70%	8,40%
1053	P62937	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,30%	11,30%	66,80%	16,70%
1056	P63104	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,10%	6,00%	57,10%	24,80%
1057	P63208	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,30%	62,50%	3,80%	20,40%
1058	P63241	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,00%	34,70%	30,30%	28,00%
1059	P67936	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,30%	5,40%	69,00%	12,30%
1060	P67936	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,50%	13,60%	44,60%	24,30%
1061	P68133	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,30%	42,20%	39,90%	13,60%
1062	P68036	model 0 ~ age+id+age*id	2	1	0	0	0	1	31,50%	1,90%	18,20%	48,40%
1063	P68363	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,90%	34,60%	43,40%	16,10%
1064	P68366	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,10%	29,50%	36,20%	17,10%
1065	P68371	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,80%	30,70%	41,00%	16,50%
1066	P68871	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,70%	78,70%	3,00%	10,60%
1068	P69905	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,50%	75,00%	2,50%	13,00%
1071	P78417	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,30%	9,00%	34,50%	41,10%
1072	P78504	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,20%	72,60%	7,60%	16,60%
1075	P80108	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,30%	55,10%	10,30%	16,30%
1076	P80188	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,00%	59,30%	8,70%	28,10%
1078	P80723	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,60%	54,60%	7,50%	21,40%
1081	P98095	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,50%	74,70%	6,10%	10,80%
1082	P98160	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,90%	27,10%	32,10%	26,00%
1083	P98161	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,80%	42,50%	18,20%	27,50%
1084	Q01459	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,60%	48,20%	11,60%	27,60%
1085	Q01469	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,10%	17,40%	38,50%	37,00%
1086	Q01518	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,90%	7,70%	67,20%	11,20%
1087	Q01523	model 0 ~ age+id+age*id	2	1	0	0	0	1	28,20%	49,50%	8,90%	13,40%
1090	Q02487	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,00%	45,90%	11,40%	22,70%
1091	Q02747	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,10%	54,30%	12,20%	33,40%
1092	Q02763	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,00%	27,20%	21,70%	50,10%
1093	Q02818	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,60%	31,40%	49,80%	3,30%
1096	Q03154	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	6,90%	21,20%	59,00%

1100	Q04721	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,90%	46,40%	38,30%	1,40%
1101	Q04756	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,10%	16,40%	26,20%	57,30%
1102	Q04760	model 0 ~ age+id+age*id	2	1	0	0	0	1	33,90%	5,80%	24,70%	35,50%
1103	Q04917	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,00%	11,80%	59,60%	16,60%
1105	Q05682	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,70%	7,60%	57,90%	19,80%
1106	Q05707	model 0 ~ age+id+age*id	2	1	0	0	0	1	51,90%	14,60%	4,00%	29,50%
1107	Q06033	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,80%	38,10%	17,70%	36,40%
1110	Q06187	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,30%	10,30%	69,10%	11,20%
1111	Q06323	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,00%	9,10%	38,10%	43,80%
1113	Q06830	model 0 ~ age+id+age*id	2	1	0	0	0	1	25,60%	31,80%	9,20%	33,40%
1115	Q07954	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,00%	6,20%	18,20%	66,60%
1117	Q08174	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,20%	51,80%	9,40%	18,60%
1118	Q08188	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,50%	59,10%	31,90%	5,60%
1120	Q08380	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,60%	69,90%	4,60%	15,90%
1124	Q08ET2	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,70%	75,40%	15,10%	6,80%
1125	Q09328	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,10%	28,70%	25,60%	25,60%
1129	Q10471	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,40%	47,70%	21,40%	21,50%
1132	Q12805	model 0 ~ age+id+age*id	2	1	0	0	0	1	25,90%	34,90%	8,90%	30,40%
1134	Q12841	model 0 ~ age+id+age*id	2	1	0	0	0	1	50,10%	20,20%	12,00%	17,70%
1135	Q12860	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,90%	28,40%	13,20%	52,60%
1136	Q12864	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,60%	56,40%	3,60%	21,40%
1139	Q13093	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,20%	28,90%	5,90%	39,00%
1140	Q13103	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,20%	85,30%	0,80%	6,70%
1141	Q13177	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,70%	24,80%	63,30%	11,20%
1142	Q13201	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,10%	64,50%	25,40%	6,00%
1144	Q13228	model 0 ~ age+id+age*id	2	1	0	0	0	1	40,40%	31,30%	8,00%	20,30%
1146	Q13232	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,40%	21,70%	15,40%	56,50%
1148	Q13308	model 0 ~ age+id+age*id	2	1	0	0	0	1	40,40%	36,50%	3,30%	19,80%
1149	Q13332	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,20%	44,20%	19,40%	18,20%
1150	Q13421	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,40%	59,50%	7,20%	22,90%
1152	Q13508	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,90%	51,80%	12,60%	27,70%
1154	Q13642	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,40%	17,30%	65,50%	7,80%
1155	Q13683	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,20%	27,80%	43,80%	17,20%
1158	Q13790	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,80%	62,00%	3,00%	19,20%
1160	Q13867	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,40%	78,80%	2,00%	13,90%
1162	Q14012	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,40%	1,20%	64,00%	18,40%
1163	Q14019	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,00%	9,10%	57,50%	23,40%
1164	Q14112	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,80%	38,10%	21,20%	33,00%
1165	Q14118	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,60%	50,00%	4,20%	31,30%
1168	Q14247	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,00%	12,30%	50,60%	27,20%
1169	Q14314	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,20%	65,70%	5,80%	13,30%
1170	Q14315	model 0 ~ age+id+age*id	2	1	0	0	0	1	38,10%	2,00%	58,30%	1,50%
1173	Q14515	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,30%	18,50%	54,20%	9,00%
1174	Q14520	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	61,10%	14,70%	18,60%
1176	Q14563	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,80%	52,50%	18,20%	19,40%
1177	Q14574	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,10%	36,00%	12,40%	41,50%
1179	Q14624	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,50%	75,20%	10,10%	12,20%
1180	Q14644	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,00%	10,20%	71,90%	4,90%
1182	Q14766	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,00%	56,80%	19,40%	19,80%
1183	Q14847	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,70%	6,90%	71,00%	10,40%

1184	Q14956	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,60%	33,40%	12,70%	53,30%
1185	Q14974	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,70%	2,90%	55,50%	30,90%
1187	Q15008	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,60%	5,00%	10,60%	65,70%
1188	Q15063	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,70%	53,30%	12,10%	10,90%
1189	Q15063	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,10%	67,00%	7,30%	20,60%
1190	Q15084	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,20%	17,10%	71,40%	4,20%
1191	Q15102	model 0 ~ age+id+age*id	2	1	0	0	0	1	41,50%	17,30%	11,10%	30,00%
1192	Q15113	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,10%	17,70%	20,40%	56,80%
1193	Q15166	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,90%	66,60%	4,60%	11,00%
1194	Q15223	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,70%	23,10%	19,50%	45,70%
1195	Q15293	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,10%	25,30%	72,30%	1,30%
1196	Q15365	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,80%	5,10%	67,70%	10,40%
1197	Q15375	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,50%	66,40%	21,20%	7,90%
1198	Q15404	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,00%	13,50%	61,70%	10,80%
1200	Q15555	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,90%	9,80%	62,60%	12,70%
1201	Q15582	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,70%	73,70%	3,10%	12,50%
1202	Q15691	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,50%	9,40%	66,50%	12,70%
1203	Q15746	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,50%	5,20%	66,00%	20,30%
1204	Q15828	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,60%	40,90%	5,10%	30,50%
1207	Q15942	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,10%	7,20%	60,70%	19,10%
1208	Q16270	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,30%	58,50%	24,40%	15,80%
1209	Q16394	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,20%	20,70%	23,40%	49,70%
1210	Q16531	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,40%	30,30%	44,70%	12,60%
1211	Q16539	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,10%	1,30%	81,60%	13,00%
1212	Q16543	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,10%	23,40%	39,10%	30,50%
1213	Q16555	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,50%	15,00%	58,80%	14,70%
1216	Q16627	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,20%	34,50%	45,50%	4,80%
1218	Q16658	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,60%	22,30%	19,20%	31,90%
1219	Q16706	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,20%	53,90%	9,70%	26,20%
1224	Q24JP5	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,40%	2,90%	25,50%	47,20%
1226	Q29940	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,20%	82,30%	2,00%	11,40%
1227	Q3ZCW2	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,40%	6,40%	58,20%	20,90%
1228	Q495W5	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,70%	41,50%	18,80%	36,10%
1229	Q4KMG0	model 0 ~ age+id+age*id	2	1	0	0	0	1	44,40%	27,30%	9,40%	18,90%
1233	Q5BLP8	model 0 ~ age+id+age*id	2	1	0	0	0	1	65,10%	17,20%	3,80%	13,90%
1234	Q5JSH3	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,10%	11,60%	61,60%	16,70%
1235	Q5KU26	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,60%	29,80%	37,00%	6,60%
1236	Q5T0T0	model 0 ~ age+id+age*id	2	1	0	0	0	1	77,30%	0,20%	7,60%	14,90%
1237	Q5T2D2	model 0 ~ age+id+age*id	2	1	0	0	0	1	42,30%	34,90%	6,10%	16,60%
1238	Q5T3I4	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,30%	49,10%	5,30%	31,40%
1240	Q5T985	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,40%	47,80%	24,70%	24,10%
1242	Q5TCJ5	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,00%	52,50%	20,00%	16,50%
1243	P07951	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,70%	6,40%	69,50%	13,50%
1246	Q5VY43	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,10%	46,80%	50,80%	1,30%
1247	Q641Q3	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,00%	53,90%	18,70%	1,40%
1248	Q6E0U4	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,40%	37,90%	37,30%	16,40%
1249	Q6EMK4	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,80%	82,90%	2,20%	13,20%
1250	Q6FHJ7	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,60%	11,00%	27,50%	45,80%
1251	Q6IBS0	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,60%	49,00%	34,80%	7,70%
1253	Q6P4E1	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,80%	56,30%	20,00%	8,90%

1255	Q6QNK2	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,30%	57,00%	10,70%	13,00%
1256	Q6UVK1	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,00%	26,10%	11,10%	45,70%
1258	Q6UWY5	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,70%	42,80%	10,20%	42,30%
1260	Q6UXB8	model 0 ~ age+id+age*id	2	1	0	0	0	1	57,20%	13,40%	7,90%	21,50%
1261	Q6UXG3	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,40%	50,00%	8,90%	28,70%
1266	Q6V0I7	model 0 ~ age+id+age*id	2	1	0	0	0	1	52,90%	29,80%	13,20%	4,20%
1268	Q6XQN6	model 0 ~ age+id+age*id	2	1	0	0	0	1	35,30%	16,10%	14,10%	34,50%
1269	Q6YHK3	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,60%	77,20%	2,30%	12,90%
1272	Q70J99	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,10%	7,60%	40,70%	37,60%
1274	Q76M96	model 0 ~ age+id+age*id	2	1	0	0	0	1	44,80%	9,20%	6,60%	39,50%
1275	Q7KZF4	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,90%	68,60%	28,50%	1,00%
1278	Q7LFX5	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,60%	26,30%	10,60%	53,60%
1280	Q7Z3B1	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,70%	38,60%	10,50%	35,30%
1281	Q7Z406	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,60%	20,80%	35,80%	34,80%
1282	Q7Z5L0	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,70%	72,00%	4,40%	18,80%
1283	Q7Z7M0	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,40%	62,60%	9,40%	20,60%
1284	Q7Z7M8	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,10%	75,10%	6,20%	13,60%
1285	Q7Z7M9	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,90%	72,20%	10,00%	8,90%
1286	Q86SF2	model 0 ~ age+id+age*id	2	1	0	0	0	1	42,60%	15,10%	5,50%	36,80%
1290	Q86TY3	model 0 ~ age+id+age*id	2	1	0	0	0	1	54,10%	29,30%	15,70%	0,90%
1291	Q86U17	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,60%	56,70%	7,80%	31,90%
1292	Q86UD1	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,70%	82,60%	8,10%	5,60%
1293	Q86UN3	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,60%	50,20%	15,60%	24,50%
1294	Q86UX7	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,10%	9,30%	60,60%	15,00%
1295	Q86VP6	model 0 ~ age+id+age*id	2	1	0	0	0	1	31,40%	5,80%	7,10%	55,70%
1299	Q86YW5	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,80%	19,80%	24,60%	43,80%
1302	Q8IUK8	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,40%	63,70%	4,20%	15,70%
1303	Q8IUX7	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,90%	62,40%	11,80%	19,00%
1305	Q8IWL2	model 0 ~ age+id+age*id	2	1	0	0	0	1	24,30%	54,30%	5,70%	15,80%
1306	Q8IWU5	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,20%	55,70%	14,60%	20,40%
1307	Q8IWV2	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,70%	36,30%	26,00%	22,00%
1308	Q8IXL6	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,40%	66,60%	3,10%	23,00%
1309	Q8IZ83	model 0 ~ age+id+age*id	2	1	0	0	0	1	42,90%	3,60%	6,80%	46,70%
1310	Q8IZF2	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,30%	73,60%	6,40%	14,70%
1311	Q8IZP7	model 0 ~ age+id+age*id	2	1	0	0	0	1	30,10%	50,10%	3,50%	16,20%
1313	Q8N392	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,00%	7,30%	49,50%	30,20%
1317	Q8NBJ4	model 0 ~ age+id+age*id	2	1	0	0	0	1	27,30%	56,40%	5,50%	10,80%
1318	Q8NBP7	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,00%	34,20%	14,40%	39,40%
1320	Q8NCC3	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,20%	65,10%	7,50%	17,20%
1321	Q8NCL4	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,50%	71,40%	25,50%	0,70%
1323	Q8NFL0	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,10%	29,90%	10,00%	53,10%
1324	Q8NFT8	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,50%	39,70%	10,00%	27,90%
1325	Q8NFY4	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,70%	15,50%	61,30%	9,50%
1326	Q8NI99	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,50%	77,40%	6,00%	14,00%
1328	Q8TD57	model 0 ~ age+id+age*id	2	1	0	0	0	1	60,50%	2,90%	11,40%	25,10%
1330	Q8TDY8	model 0 ~ age+id+age*id	2	1	0	0	0	1	43,30%	17,10%	28,70%	10,90%
1331	Q8TER0	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,20%	36,50%	19,90%	17,40%
1332	Q8TF66	model 0 ~ age+id+age*id	2	1	0	0	0	1	26,60%	4,00%	11,30%	58,10%
1333	Q8WTU2	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,80%	73,80%	7,60%	10,70%
1336	Q8WUM4	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,10%	12,40%	11,20%	67,30%

1339	Q8WWZ8	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,80%	44,30%	30,70%	14,10%
1342	Q8WZ75	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,20%	85,80%	2,60%	9,40%
1343	Q8WZA1	model 0 ~ age+id+age*id	2	1	0	0	0	1	21,10%	24,20%	50,70%	4,00%
1344	Q92187	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,70%	28,00%	10,90%	43,50%
1345	Q92484	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,20%	91,40%	1,50%	3,90%
1346	Q92496	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,40%	69,60%	11,00%	9,00%
1348	Q92626	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,00%	18,30%	37,10%	25,60%
1353	Q92820	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,60%	61,90%	5,20%	25,20%
1360	Q93063	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,90%	28,90%	34,50%	24,70%
1361	Q969E1	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,50%	37,60%	8,90%	50,10%
1362	Q969H8	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,80%	13,50%	69,30%	12,40%
1363	Q96C86	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,70%	55,50%	11,60%	9,20%
1364	Q96CG8	model 0 ~ age+id+age*id	2	1	0	0	0	1	39,70%	33,40%	12,20%	14,70%
1366	Q96CX2	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,90%	10,20%	34,70%	52,20%
1367	Q96FE7	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,60%	59,20%	28,80%	6,40%
1368	Q96G03	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,10%	2,10%	67,60%	23,10%
1369	Q96H15	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,50%	79,30%	6,40%	6,80%
1372	Q96IU4	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,50%	25,90%	12,50%	52,20%
1373	Q96IY4	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,80%	33,00%	39,50%	22,70%
1374	Q96JP9	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,90%	10,00%	8,20%	67,90%
1375	Q96JQ0	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,70%	48,70%	34,20%	7,40%
1376	Q96KG7	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,70%	22,80%	28,40%	46,20%
1377	Q96KN2	model 0 ~ age+id+age*id	2	1	0	0	0	1	72,60%	21,90%	2,70%	2,80%
1379	Q96LA6	model 0 ~ age+id+age*id	2	1	0	0	0	1	49,40%	30,80%	4,80%	14,90%
1381	Q96MK3	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,50%	65,80%	4,80%	21,90%
1382	Q96MU8	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,90%	52,00%	23,50%	18,70%
1384	Q96PD5	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,10%	71,60%	5,60%	19,70%
1385	Q96RD9	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,80%	34,50%	16,70%	33,00%
1386	Q96RW7	model 0 ~ age+id+age*id	2	1	0	0	0	1	48,30%	21,10%	21,00%	9,50%
1387	Q96S96	model 0 ~ age+id+age*id	2	1	0	0	0	1	39,90%	28,00%	15,00%	17,10%
1390	Q99536	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,10%	29,70%	16,90%	45,30%
1391	Q99538	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,00%	52,90%	7,80%	28,30%
1392	Q99650	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,00%	55,20%	11,50%	29,20%
1395	Q99784	model 0 ~ age+id+age*id	2	1	0	0	0	1	21,30%	37,80%	37,10%	3,80%
1397	Q99941	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,50%	42,70%	6,70%	33,10%
1398	Q99969	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,30%	60,50%	13,20%	22,00%
1399	Q99972	model 0 ~ age+id+age*id	2	1	0	0	0	1	54,70%	11,90%	9,90%	23,50%
1400	Q99983	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,60%	16,00%	20,50%	53,90%
1401	Q9BQ51	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,40%	30,20%	27,80%	35,50%
1405	Q9BRK3	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,20%	8,10%	26,40%	61,40%
1408	Q9BUN1	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,60%	73,40%	7,00%	16,10%
1411	Q9BWV1	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,30%	15,60%	16,30%	47,80%
1412	Q9BXJ0	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,40%	10,70%	34,30%	40,60%
1414	Q9BXJ4	model 0 ~ age+id+age*id	2	1	0	0	0	1	34,00%	36,90%	3,90%	25,20%
1415	Q9BXR6	model 0 ~ age+id+age*id	2	1	0	0	0	1	39,40%	32,40%	8,60%	19,50%
1418	Q9BYE9	model 0 ~ age+id+age*id	2	1	0	0	0	1	22,40%	53,50%	4,30%	19,80%
1420	Q9BYJ0	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,30%	53,60%	13,50%	28,60%
1422	Q9C0C4	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,20%	21,60%	41,40%	36,90%
1423	Q9C0C9	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,10%	2,90%	13,70%	71,30%
1424	Q9GZP0	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,80%	74,90%	2,40%	19,90%

1425	Q9GZP4	model 0 ~ age+id+age*id	2	1	0	0	0	1	48,10%	8,90%	8,10%	34,90%
1428	Q9H0X4	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,00%	41,90%	22,40%	31,70%
1430	Q9H2G2	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,30%	33,60%	7,10%	41,10%
1431	Q9H4A4	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,00%	43,80%	15,50%	36,70%
1432	Q9H4A9	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,90%	27,60%	11,80%	39,70%
1433	Q9H4B7	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,40%	41,80%	37,60%	9,20%
1434	Q9H4G4	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,70%	57,00%	11,00%	19,30%
1435	Q9H6X2	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,50%	41,90%	19,60%	29,00%
1440	Q9HBI1	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,80%	5,70%	68,20%	9,30%
1441	Q9HBR0	model 0 ~ age+id+age*id	2	1	0	0	0	1	21,70%	36,70%	13,30%	28,40%
1442	Q9HBW1	model 0 ~ age+id+age*id	2	1	0	0	0	1	23,40%	31,40%	12,00%	33,20%
1444	Q9HCB6	model 0 ~ age+id+age*id	2	1	0	0	0	1	38,00%	20,20%	10,70%	31,10%
1445	Q9HCL0	model 0 ~ age+id+age*id	2	1	0	0	0	1	33,30%	35,90%	8,60%	22,20%
1446	Q9HCN6	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,20%	30,30%	46,90%	9,60%
1447	Q9HCU0	model 0 ~ age+id+age*id	2	1	0	0	0	1	28,00%	19,50%	15,70%	36,80%
1448	Q9NPF0	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,30%	12,40%	58,70%	26,60%
1449	Q9NPG4	model 0 ~ age+id+age*id	2	1	0	0	0	1	30,90%	44,40%	7,20%	17,50%
1450	Q9NPH3	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,80%	84,70%	9,30%	1,10%
1451	Q9NPY3	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,40%	52,50%	7,80%	26,30%
1452	Q9NQ38	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,00%	4,50%	21,00%	71,60%
1457	Q9NRB3	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,30%	33,10%	5,00%	52,60%
1459	Q9NRR1	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,60%	58,60%	4,80%	30,00%
1460	Q9NRV9	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,90%	3,80%	12,10%	63,20%
1464	Q9NT22	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,60%	12,70%	35,80%	14,90%
1465	Q9NT99	model 0 ~ age+id+age*id	2	1	0	0	0	1	32,10%	19,20%	12,00%	36,70%
1467	Q9NTU7	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,40%	42,70%	11,30%	35,60%
1473	Q9NYU2	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,50%	38,80%	38,80%	6,00%
1474	Q9NZ08	model 0 ~ age+id+age*id	2	1	0	0	0	1	2,30%	90,10%	1,30%	6,20%
1477	Q9P121	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,80%	2,20%	18,70%	42,30%
1478	Q9P1F3	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,30%	7,20%	41,40%	32,10%
1480	Q9BTN0	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,10%	40,10%	21,00%	32,80%
1481	Q9P2B2	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,60%	70,70%	7,90%	14,70%
1482	Q9P2X0	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,20%	3,30%	39,30%	57,20%
1483	Q9UBG0	model 0 ~ age+id+age*id	2	1	0	0	0	1	12,90%	24,80%	18,70%	43,60%
1484	Q9UBQ6	model 0 ~ age+id+age*id	2	1	0	0	0	1	7,10%	38,50%	7,40%	47,00%
1486	Q9UBR2	model 0 ~ age+id+age*id	2	1	0	0	0	1	29,00%	18,30%	6,30%	46,30%
1488	Q9UBX1	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,90%	58,50%	4,10%	30,50%
1489	Q9UEW3	model 0 ~ age+id+age*id	2	1	0	0	0	1	14,10%	46,20%	12,60%	27,00%
1490	Q9UGM5	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,60%	34,00%	13,20%	34,10%
1491	Q9UGT4	model 0 ~ age+id+age*id	2	1	0	0	0	1	9,40%	11,30%	42,90%	36,30%
1492	Q9UHG2	model 0 ~ age+id+age*id	2	1	0	0	0	1	29,80%	36,80%	11,90%	21,60%
1495	Q9UIB8	model 0 ~ age+id+age*id	2	1	0	0	0	1	0,30%	4,20%	94,30%	1,30%
1499	Q9UJC5	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,50%	0,40%	86,10%	8,00%
1500	Q9UJJ9	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,10%	13,00%	11,20%	67,70%
1501	Q9UJU6	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,60%	7,00%	63,40%	16,10%
1503	Q9UK23	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,00%	19,60%	46,90%	22,50%
1504	Q9UKU6	model 0 ~ age+id+age*id	2	1	0	0	0	1	53,50%	1,20%	18,70%	26,60%
1505	Q9UKY7	model 0 ~ age+id+age*id	2	1	0	0	0	1	10,50%	2,20%	77,30%	10,00%
1506	Q9UKZ9	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,30%	31,20%	23,50%	39,90%
1507	Q9ULI3	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,70%	60,00%	21,60%	14,70%

1508	Q9ULV4	model 0 ~ age+id+age*id	2	1	0	0	0	1	20,30%	7,80%	46,60%	25,30%			
1510	Q9UMX5	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,40%	55,70%	4,40%	23,50%			
1512	Q9UN70	model 0 ~ age+id+age*id	2	1	0	0	0	1	28,60%	34,20%	7,80%	29,40%			
1514	Q9UNN8	model 0 ~ age+id+age*id	2	1	0	0	0	1	5,30%	70,40%	7,60%	16,60%			
1516	Q9UNZ2	model 0 ~ age+id+age*id	2	1	0	0	0	1	15,70%	3,70%	53,60%	27,10%			
1517	Q9UP79	model 0 ~ age+id+age*id	2	1	0	0	0	1	4,50%	74,90%	14,40%	6,20%			
1518	Q9UQ52	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,10%	41,30%	47,40%	0,30%			
1521	Q9Y251	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,90%	20,10%	50,70%	10,20%			
1523	Q9Y279	model 0 ~ age+id+age*id	2	1	0	0	0	1	17,60%	34,00%	25,80%	22,60%			
1525	Q9Y3F4	model 0 ~ age+id+age*id	2	1	0	0	0	1	16,50%	6,70%	69,80%	7,00%			
1526	Q9Y490	model 0 ~ age+id+age*id	2	1	0	0	0	1	19,10%	5,10%	45,60%	30,10%			
1527	Q9Y4D7	model 0 ~ age+id+age*id	2	1	0	0	0	1	1,50%	65,90%	24,90%	7,70%			
1529	Q9Y5X9	model 0 ~ age+id+age*id	2	1	0	0	0	1	3,90%	73,90%	4,00%	18,20%			
1530	Q9Y5Y6	model 0 ~ age+id+age*id	2	1	0	0	0	1	36,40%	34,40%	10,30%	19,00%			
1531	Q9Y5Y7	model 0 ~ age+id+age*id	2	1	0	0	0	1	8,50%	55,00%	7,90%	28,70%			
1532	Q9Y608	model 0 ~ age+id+age*id	2	1	0	0	0	1	66,70%	0,10%	11,60%	21,60%			
1533	Q9Y646	model 0 ~ age+id+age*id	2	1	0	0	0	1	13,20%	52,60%	4,70%	29,50%			
1534	Q9Y696	model 0 ~ age+id+age*id	2	1	0	0	0	1	11,80%	19,90%	45,40%	22,90%			
1535	Q9Y6N7	model 0 ~ age+id+age*id	2	1	0	0	0	1	33,80%	47,90%	10,60%	7,80%			
1536	Q9Y6R7	model 0 ~ age+id+age*id	2	1	0	0	0	1	18,50%	65,00%	9,20%	7,40%			
1538	Q9Y6Z7	model 0 ~ age+id+age*id	2	1	0	0	0	1	6,10%	53,00%	16,20%	24,80%			
419	O43915	model 0 ~ age+seroT+gender+id+age*gender+age*id	2	1	1	0	1	1	2,40%	14,00%	24,50%	24,70%	2,20%	28,60%	3,60%
543	P03971	model 0 ~ age+seroT+gender+id+age*gender+age*id	2	1	1	0	1	1	0,70%	0,00%	49,00%	1,80%	43,90%	3,30%	1,30%
429	O75037	model 0 ~ age+seroT+group+id+age*group+age*id	2	1	1	1	0	1	60,60%	5,50%	0,30%	0,50%	30,10%	0,70%	2,30%
33	Q00610	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	27,80%	1,60%	5,40%	14,00%	51,10%		
39	P12830	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	4,40%	0,80%	61,10%	5,10%	28,60%		
49	P05997	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	32,10%	0,10%	29,80%	28,20%	9,90%		
50	Q9BY67	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	20,20%	0,20%	54,30%	10,20%	15,10%		
54	P09668	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	4,20%	2,30%	77,80%	5,20%	10,40%		
57	A0A087X0M8	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	0,20%	2,00%	52,50%	23,70%	21,70%		
117	Q8N2S1	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	12,60%	6,40%	12,20%	25,30%	43,50%		
123	A0A0G2JH38	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	0,30%	10,30%	88,90%	0,20%	0,30%		
237	Q9H2X3	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	2,50%	0,20%	44,50%	52,20%	0,70%		
270	O95084	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	58,90%	2,40%	20,20%	11,40%	7,20%		
292	O43493	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	6,20%	0,00%	35,70%	30,70%	27,30%		
294	Q96AP7	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	8,70%	0,50%	51,80%	32,20%	6,80%		
298	Q9UK55	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	3,40%	1,30%	69,70%	10,10%	15,40%		
328	Q01484	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	71,30%	5,00%	4,00%	9,80%	10,00%		
341	Q8WVN6	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	13,10%	0,20%	7,80%	32,10%	46,80%		
342	P09564	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	28,90%	0,80%	48,70%	8,00%	13,60%		
368	O00241	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	6,00%	9,30%	50,40%	17,50%	16,70%		
438	O75368	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	11,20%	14,30%	26,60%	19,80%	28,10%		
443	O75594	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	16,10%	2,60%	40,20%	20,30%	20,70%		
460	O95428	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	23,70%	2,50%	50,80%	8,40%	14,60%		
488	P00813	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	4,80%	0,30%	66,50%	19,70%	8,70%		
510	P02144	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	3,10%	0,40%	11,00%	12,40%	73,20%		
553	P04155	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	3,00%	5,30%	60,70%	23,90%	7,00%		
619	P07451	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	26,50%	2,00%	1,90%	47,30%	22,30%		
622	P07602	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	25,00%	5,50%	18,60%	5,70%	45,20%		
628	P07858	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	19,20%	0,90%	55,70%	13,10%	11,10%		

728	P13674	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	36,90%	4,20%	36,60%	11,70%	10,60%
747	P14780	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	2,70%	2,30%	76,60%	5,50%	13,00%
761	P16035	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	16,30%	0,80%	31,60%	12,70%	38,60%
814	P21709	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	13,20%	1,70%	43,20%	19,00%	22,80%
817	P22303	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	18,20%	5,70%	47,00%	20,60%	8,50%
834	P23468	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	30,20%	1,50%	46,30%	18,30%	3,70%
866	P28070	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	6,40%	0,70%	26,00%	13,10%	53,90%
937	P40306	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	8,70%	1,90%	27,90%	31,60%	29,90%
1112	Q06828	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	50,20%	0,10%	10,10%	7,90%	31,70%
1126	Q0VAF6	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	21,10%	5,30%	40,90%	6,30%	26,30%
1186	Q14982	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	51,30%	2,50%	10,60%	8,60%	27,00%
1232	Q58EX2	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	30,90%	0,80%	37,40%	7,30%	23,70%
1270	Q6ZMI3	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	2,00%	78,50%	4,60%	2,90%	12,10%
1297	Q86WI1	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	2,30%	0,60%	82,10%	2,50%	12,40%
1340	Q8WXD2	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	63,40%	0,40%	24,70%	2,60%	8,80%
1347	Q92520	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	36,10%	2,10%	23,30%	13,00%	25,60%
1350	Q92692	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	25,40%	0,60%	16,90%	51,20%	5,90%
1354	Q92854	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	2,30%	1,40%	47,00%	13,40%	36,00%
1472	Q9NYQ6	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	24,60%	1,30%	50,00%	19,50%	4,60%
1509	Q9UM47	model 0 ~ age+seroT+id+age*id	2	1	1	0	0	1	4,20%	4,10%	58,90%	8,70%	24,20%
137	P07478	model 0 ~ group+id	2	0	0	1	0	1	20,10%	21,40%	58,50%		
1334	Q8WUA8	model 0 ~ group+id	2	0	0	1	0	1	13,50%	21,50%	65,00%		
1487	Q9UBV8	model 0 ~ group+id	2	0	0	1	0	1	4,20%	28,40%	67,40%		
4	O75503	model 0 ~ id	2	0	0	0	0	1	10,30%	89,70%			
5	O00748	model 0 ~ id	2	0	0	0	0	1	49,90%	50,10%			
6	P25787	model 0 ~ id	2	0	0	0	0	1	68,40%	31,60%			
7	P01834	model 0 ~ id	2	0	0	0	0	1	49,60%	50,40%			
8	P01714	model 0 ~ id	2	0	0	0	0	1	26,00%	74,00%			
9	P0CG05	model 0 ~ id	2	0	0	0	0	1	42,40%	57,60%			
10	P01617	model 0 ~ id	2	0	0	0	0	1	25,30%	74,70%			
13	P80303	model 0 ~ id	2	0	0	0	0	1	18,90%	81,10%			
20	Q96C36	model 0 ~ id	2	0	0	0	0	1	5,90%	94,10%			
25	P49720	model 0 ~ id	2	0	0	0	0	1	61,70%	38,30%			
28	Q8IYS5	model 0 ~ id	2	0	0	0	0	1	53,30%	46,70%			
30	P01857	model 0 ~ id	2	0	0	0	0	1	40,60%	59,40%			
35	Q9P2T1	model 0 ~ id	2	0	0	0	0	1	8,10%	91,90%			
37	Q15833	model 0 ~ id	2	0	0	0	0	1	0,40%	99,60%			
41	P50895	model 0 ~ id	2	0	0	0	0	1	45,80%	54,20%			
44	P29122	model 0 ~ id	2	0	0	0	0	1	40,30%	59,70%			
53	Q9H251	model 0 ~ id	2	0	0	0	0	1	50,90%	49,10%			
58	Q9UMY4	model 0 ~ id	2	0	0	0	0	1	3,90%	96,10%			
59	P69849	model 0 ~ id	2	0	0	0	0	1	29,00%	71,00%			
66	P09326	model 0 ~ id	2	0	0	0	0	1	60,40%	39,60%			
69	P01871	model 0 ~ id	2	0	0	0	0	1	62,50%	37,50%			
72	Q86UX2	model 0 ~ id	2	0	0	0	0	1	14,80%	85,20%			
73	P35542	model 0 ~ id	2	0	0	0	0	1	23,60%	76,40%			
78	P22694	model 0 ~ id	2	0	0	0	0	1	0,30%	99,70%			
83	Q86UQ4	model 0 ~ id	2	0	0	0	0	1	7,10%	92,90%			
84	Q6UX73	model 0 ~ id	2	0	0	0	0	1	59,90%	40,10%			
86	P07108	model 0 ~ id	2	0	0	0	0	1	13,20%	86,80%			

87	P21266	model 0 ~ id	2	0	0	0	0	1	35,80%	64,20%
91	Q8WZ42	model 0 ~ id	2	0	0	0	0	1	50,90%	49,10%
93	Q9Y240	model 0 ~ id	2	0	0	0	0	1	48,70%	51,30%
97	P01623	model 0 ~ id	2	0	0	0	0	1	18,40%	81,60%
98	P0CG04	model 0 ~ id	2	0	0	0	0	1	42,90%	57,10%
100	P01598	model 0 ~ id	2	0	0	0	0	1	63,70%	36,30%
106	Q9Y6C2	model 0 ~ id	2	0	0	0	0	1	14,90%	85,10%
114	P04632	model 0 ~ id	2	0	0	0	0	1	41,00%	59,00%
122	Q13094	model 0 ~ id	2	0	0	0	0	1	6,30%	93,70%
125	P0DMV9	model 0 ~ id	2	0	0	0	0	1	5,90%	94,10%
126	P28065	model 0 ~ id	2	0	0	0	0	1	30,40%	69,60%
129	Q5SQ64	model 0 ~ id	2	0	0	0	0	1	37,30%	62,70%
135	A0A0G2JPA8	model 0 ~ id	2	0	0	0	0	1	99,00%	1,00%
136	P01861	model 0 ~ id	2	0	0	0	0	1	64,80%	35,20%
140	Q92954	model 0 ~ id	2	0	0	0	0	1	63,70%	36,30%
146	Q10588	model 0 ~ id	2	0	0	0	0	1	87,40%	12,60%
147	Q9UKK9	model 0 ~ id	2	0	0	0	0	1	2,00%	98,00%
153	P07148	model 0 ~ id	2	0	0	0	0	1	18,80%	81,20%
157	P29323	model 0 ~ id	2	0	0	0	0	1	41,90%	58,10%
161	P19256	model 0 ~ id	2	0	0	0	0	1	19,70%	80,30%
164	Q99719	model 0 ~ id	2	0	0	0	0	1	2,20%	97,80%
167	Q13126	model 0 ~ id	2	0	0	0	0	1	55,70%	44,30%
170	O95199	model 0 ~ id	2	0	0	0	0	1	34,80%	65,20%
171	P00751	model 0 ~ id	2	0	0	0	0	1	35,80%	64,20%
174	Q14746	model 0 ~ id	2	0	0	0	0	1	0,90%	99,10%
176	P62495	model 0 ~ id	2	0	0	0	0	1	15,60%	84,40%
177	B7ZKJ8	model 0 ~ id	2	0	0	0	0	1	50,00%	50,00%
180	P11362	model 0 ~ id	2	0	0	0	0	1	58,90%	41,10%
186	P05090	model 0 ~ id	2	0	0	0	0	1	48,60%	51,40%
192	C9JV77	model 0 ~ id	2	0	0	0	0	1	81,10%	18,90%
194	O43790	model 0 ~ id	2	0	0	0	0	1	50,10%	49,90%
195	P02533	model 0 ~ id	2	0	0	0	0	1	35,10%	64,90%
196	P02538	model 0 ~ id	2	0	0	0	0	1	15,40%	84,60%
197	P02768	model 0 ~ id	2	0	0	0	0	1	0,20%	99,80%
198	P07477	model 0 ~ id	2	0	0	0	0	1	54,00%	46,00%
199	P08779	model 0 ~ id	2	0	0	0	0	1	32,10%	67,90%
200	P13645	model 0 ~ id	2	0	0	0	0	1	21,40%	78,60%
201	P13647	model 0 ~ id	2	0	0	0	0	1	21,90%	78,10%
202	P35908	model 0 ~ id	2	0	0	0	0	1	19,00%	81,00%
203	P48668	model 0 ~ id	2	0	0	0	0	1	18,40%	81,60%
204	Q04695	model 0 ~ id	2	0	0	0	0	1	29,10%	70,90%
205	Q15323	model 0 ~ id	2	0	0	0	0	1	63,10%	36,90%
206	Q86Y46	model 0 ~ id	2	0	0	0	0	1	29,00%	71,00%
207	Q5D862	model 0 ~ id	2	0	0	0	0	1	1,40%	98,60%
208	Q8N1N4	model 0 ~ id	2	0	0	0	0	1	31,90%	68,10%
209	Q7Z794	model 0 ~ id	2	0	0	0	0	1	1,70%	98,30%
220	Q9H173	model 0 ~ id	2	0	0	0	0	1	75,40%	24,60%
226	P16949	model 0 ~ id	2	0	0	0	0	1	4,90%	95,10%
230	P62158	model 0 ~ id	2	0	0	0	0	1	9,40%	90,60%
232	Q13510	model 0 ~ id	2	0	0	0	0	1	34,60%	65,40%

235	P04070	model 0 ~ id	2	0	0	0	0	1	37,60%	62,40%
239	P28827	model 0 ~ id	2	0	0	0	0	1	55,70%	44,30%
242	P16278	model 0 ~ id	2	0	0	0	0	1	52,00%	48,00%
244	P51659	model 0 ~ id	2	0	0	0	0	1	21,80%	78,20%
247	E7ESP4	model 0 ~ id	2	0	0	0	0	1	9,00%	91,00%
248	P05156	model 0 ~ id	2	0	0	0	0	1	13,40%	86,60%
249	E7ETN3	model 0 ~ id	2	0	0	0	0	1	42,30%	57,70%
254	P15121	model 0 ~ id	2	0	0	0	0	1	7,40%	92,60%
255	P35916	model 0 ~ id	2	0	0	0	0	1	51,90%	48,10%
260	E9PFZ2	model 0 ~ id	2	0	0	0	0	1	98,80%	1,20%
264	P05452	model 0 ~ id	2	0	0	0	0	1	65,90%	34,10%
268	P55786	model 0 ~ id	2	0	0	0	0	1	39,30%	60,70%
271	O95967	model 0 ~ id	2	0	0	0	0	1	48,20%	51,80%
272	Q96FW1	model 0 ~ id	2	0	0	0	0	1	2,80%	97,20%
273	P08195	model 0 ~ id	2	0	0	0	0	1	56,40%	43,60%
287	Q99542	model 0 ~ id	2	0	0	0	0	1	37,50%	62,50%
290	P48740	model 0 ~ id	2	0	0	0	0	1	70,60%	29,40%
291	Q9Y6X6	model 0 ~ id	2	0	0	0	0	1	33,90%	66,10%
299	Q14767	model 0 ~ id	2	0	0	0	0	1	52,90%	47,10%
308	P29017	model 0 ~ id	2	0	0	0	0	1	43,20%	56,80%
315	P62491	model 0 ~ id	2	0	0	0	0	1	5,60%	94,40%
317	Q92736	model 0 ~ id	2	0	0	0	0	1	45,20%	54,80%
321	Q15435	model 0 ~ id	2	0	0	0	0	1	18,80%	81,20%
331	J3KN67	model 0 ~ id	2	0	0	0	0	1	24,70%	75,30%
337	P58335	model 0 ~ id	2	0	0	0	0	1	53,90%	46,10%
343	P04626	model 0 ~ id	2	0	0	0	0	1	36,10%	63,90%
345	P13598	model 0 ~ id	2	0	0	0	0	1	42,50%	57,50%
348	O95834	model 0 ~ id	2	0	0	0	0	1	23,30%	76,70%
349	Q99426	model 0 ~ id	2	0	0	0	0	1	6,40%	93,60%
352	O43765	model 0 ~ id	2	0	0	0	0	1	1,00%	99,00%
353	Q13526	model 0 ~ id	2	0	0	0	0	1	1,80%	98,20%
355	P02655	model 0 ~ id	2	0	0	0	0	1	32,30%	67,70%
357	P02654	model 0 ~ id	2	0	0	0	0	1	63,20%	36,80%
358	P55083	model 0 ~ id	2	0	0	0	0	1	56,10%	43,90%
359	P55899	model 0 ~ id	2	0	0	0	0	1	65,90%	34,10%
360	Q9NNX6	model 0 ~ id	2	0	0	0	0	1	37,50%	62,50%
365	O00161	model 0 ~ id	2	0	0	0	0	1	2,90%	97,10%
366	O00187	model 0 ~ id	2	0	0	0	0	1	64,20%	35,80%
375	O00468	model 0 ~ id	2	0	0	0	0	1	54,80%	45,20%
376	O00507	model 0 ~ id	2	0	0	0	0	1	48,50%	51,50%
377	O00533	model 0 ~ id	2	0	0	0	0	1	56,20%	43,80%
379	O00602	model 0 ~ id	2	0	0	0	0	1	46,50%	53,50%
384	O14672	model 0 ~ id	2	0	0	0	0	1	43,70%	56,30%
389	O14917	model 0 ~ id	2	0	0	0	0	1	29,50%	70,50%
392	O15031	model 0 ~ id	2	0	0	0	0	1	46,60%	53,40%
398	O15230	model 0 ~ id	2	0	0	0	0	1	17,10%	82,90%
402	O15400	model 0 ~ id	2	0	0	0	0	1	0,20%	99,80%
409	O43405	model 0 ~ id	2	0	0	0	0	1	51,80%	48,20%
415	O43827	model 0 ~ id	2	0	0	0	0	1	22,20%	77,80%
420	O43916	model 0 ~ id	2	0	0	0	0	1	60,70%	39,30%

422	O60279	model 0 ~ id	2	0	0	0	0	1	37,00%	63,00%
426	O60749	model 0 ~ id	2	0	0	0	0	1	4,40%	95,60%
427	O60844	model 0 ~ id	2	0	0	0	0	1	34,70%	65,30%
432	O75131	model 0 ~ id	2	0	0	0	0	1	16,80%	83,20%
436	O75340	model 0 ~ id	2	0	0	0	0	1	83,00%	17,00%
437	O75356	model 0 ~ id	2	0	0	0	0	1	58,00%	42,00%
447	O75882	model 0 ~ id	2	0	0	0	0	1	59,60%	40,40%
457	O95336	model 0 ~ id	2	0	0	0	0	1	20,20%	79,80%
461	O95445	model 0 ~ id	2	0	0	0	0	1	42,00%	58,00%
466	Q5SSV3	model 0 ~ id	2	0	0	0	0	1	9,10%	90,90%
472	P00367	model 0 ~ id	2	0	0	0	0	1	59,60%	40,40%
477	P00488	model 0 ~ id	2	0	0	0	0	1	58,70%	41,30%
480	P00558	model 0 ~ id	2	0	0	0	0	1	2,20%	97,80%
482	P00734	model 0 ~ id	2	0	0	0	0	1	34,90%	65,10%
483	P00738	model 0 ~ id	2	0	0	0	0	1	77,10%	22,90%
492	P01008	model 0 ~ id	2	0	0	0	0	1	36,70%	63,30%
493	P01009	model 0 ~ id	2	0	0	0	0	1	45,90%	54,10%
494	P01011	model 0 ~ id	2	0	0	0	0	1	23,70%	76,30%
501	P01042	model 0 ~ id	2	0	0	0	0	1	64,10%	35,90%
502	P01042	model 0 ~ id	2	0	0	0	0	1	53,80%	46,20%
503	P01127	model 0 ~ id	2	0	0	0	0	1	10,60%	89,40%
506	P01591	model 0 ~ id	2	0	0	0	0	1	66,70%	33,30%
508	P01876	model 0 ~ id	2	0	0	0	0	1	29,80%	70,20%
514	P02462	model 0 ~ id	2	0	0	0	0	1	48,60%	51,40%
515	P02545	model 0 ~ id	2	0	0	0	0	1	16,60%	83,40%
519	P02671	model 0 ~ id	2	0	0	0	0	1	44,90%	55,10%
520	P02675	model 0 ~ id	2	0	0	0	0	1	25,80%	74,20%
521	P02679	model 0 ~ id	2	0	0	0	0	1	27,10%	72,90%
522	P02741	model 0 ~ id	2	0	0	0	0	1	37,50%	62,50%
523	P02743	model 0 ~ id	2	0	0	0	0	1	22,10%	77,90%
528	P02750	model 0 ~ id	2	0	0	0	0	1	67,50%	32,50%
529	P02751	model 0 ~ id	2	0	0	0	0	1	7,80%	92,20%
533	P02766	model 0 ~ id	2	0	0	0	0	1	12,60%	87,40%
534	P02774	model 0 ~ id	2	0	0	0	0	1	32,80%	67,20%
538	P02790	model 0 ~ id	2	0	0	0	0	1	52,40%	47,60%
545	P04003	model 0 ~ id	2	0	0	0	0	1	32,90%	67,10%
549	P04075	model 0 ~ id	2	0	0	0	0	1	6,30%	93,70%
550	P04083	model 0 ~ id	2	0	0	0	0	1	0,60%	99,40%
555	P04196	model 0 ~ id	2	0	0	0	0	1	84,50%	15,50%
558	P04259	model 0 ~ id	2	0	0	0	0	1	24,60%	75,40%
559	P04264	model 0 ~ id	2	0	0	0	0	1	25,20%	74,80%
560	P04275	model 0 ~ id	2	0	0	0	0	1	7,40%	92,60%
563	P04424	model 0 ~ id	2	0	0	0	0	1	53,80%	46,20%
568	P04899	model 0 ~ id	2	0	0	0	0	1	27,40%	72,60%
570	P05026	model 0 ~ id	2	0	0	0	0	1	30,40%	69,60%
572	P05062	model 0 ~ id	2	0	0	0	0	1	18,50%	81,50%
576	P05109	model 0 ~ id	2	0	0	0	0	1	13,60%	86,40%
581	P05164	model 0 ~ id	2	0	0	0	0	1	21,20%	78,80%
584	P05451	model 0 ~ id	2	0	0	0	0	1	12,10%	87,90%
589	P05771	model 0 ~ id	2	0	0	0	0	1	0,40%	99,60%

592	P06280	model 0 ~ id	2	0	0	0	0	1	27,50%	72,50%
593	P06312	model 0 ~ id	2	0	0	0	0	1	50,60%	49,40%
596	P06681	model 0 ~ id	2	0	0	0	0	1	51,30%	48,70%
597	P06702	model 0 ~ id	2	0	0	0	0	1	29,80%	70,20%
604	P06753	model 0 ~ id	2	0	0	0	0	1	9,20%	90,80%
607	P07093	model 0 ~ id	2	0	0	0	0	1	23,80%	76,20%
613	P07355	model 0 ~ id	2	0	0	0	0	1	9,90%	90,10%
615	P07358	model 0 ~ id	2	0	0	0	0	1	71,10%	28,90%
618	P07437	model 0 ~ id	2	0	0	0	0	1	4,20%	95,80%
621	P07585	model 0 ~ id	2	0	0	0	0	1	25,30%	74,70%
624	P07711	model 0 ~ id	2	0	0	0	0	1	27,10%	72,90%
627	P07741	model 0 ~ id	2	0	0	0	0	1	27,60%	72,40%
629	P07900	model 0 ~ id	2	0	0	0	0	1	1,00%	99,00%
640	P08238	model 0 ~ id	2	0	0	0	0	1	16,20%	83,80%
658	P09104	model 0 ~ id	2	0	0	0	0	1	11,30%	88,70%
661	P09382	model 0 ~ id	2	0	0	0	0	1	48,70%	51,30%
662	P09417	model 0 ~ id	2	0	0	0	0	1	19,30%	80,70%
667	P09603	model 0 ~ id	2	0	0	0	0	1	90,60%	9,40%
668	P09619	model 0 ~ id	2	0	0	0	0	1	80,40%	19,60%
669	P09871	model 0 ~ id	2	0	0	0	0	1	31,60%	68,40%
670	P09960	model 0 ~ id	2	0	0	0	0	1	46,20%	53,80%
672	P0C0L4	model 0 ~ id	2	0	0	0	0	1	93,80%	6,20%
673	P0C0L5	model 0 ~ id	2	0	0	0	0	1	49,70%	50,30%
678	P10253	model 0 ~ id	2	0	0	0	0	1	5,70%	94,30%
689	P10909	model 0 ~ id	2	0	0	0	0	1	50,00%	50,00%
693	P11142	model 0 ~ id	2	0	0	0	0	1	2,10%	97,90%
695	P11169	model 0 ~ id	2	0	0	0	0	1	41,00%	59,00%
699	P11413	model 0 ~ id	2	0	0	0	0	1	8,30%	91,70%
700	P11597	model 0 ~ id	2	0	0	0	0	1	85,70%	14,30%
705	P12104	model 0 ~ id	2	0	0	0	0	1	17,30%	82,70%
711	P12270	model 0 ~ id	2	0	0	0	0	1	54,40%	45,60%
717	P12883	model 0 ~ id	2	0	0	0	0	1	23,10%	76,90%
718	P12931	model 0 ~ id	2	0	0	0	0	1	8,80%	91,20%
719	P12955	model 0 ~ id	2	0	0	0	0	1	60,00%	40,00%
729	P13686	model 0 ~ id	2	0	0	0	0	1	51,10%	48,90%
731	P13693	model 0 ~ id	2	0	0	0	0	1	2,90%	97,10%
739	P14209	model 0 ~ id	2	0	0	0	0	1	50,00%	50,00%
740	P14324	model 0 ~ id	2	0	0	0	0	1	7,10%	92,90%
741	P14384	model 0 ~ id	2	0	0	0	0	1	30,70%	69,30%
743	P14550	model 0 ~ id	2	0	0	0	0	1	69,40%	30,60%
746	P14625	model 0 ~ id	2	0	0	0	0	1	74,60%	25,40%
749	P14923	model 0 ~ id	2	0	0	0	0	1	28,70%	71,30%
760	P15924	model 0 ~ id	2	0	0	0	0	1	24,70%	75,30%
766	P16234	model 0 ~ id	2	0	0	0	0	1	50,40%	49,60%
767	P16284	model 0 ~ id	2	0	0	0	0	1	53,20%	46,80%
782	P18428	model 0 ~ id	2	0	0	0	0	1	53,30%	46,70%
789	P19367	model 0 ~ id	2	0	0	0	0	1	2,20%	97,80%
790	P19440	model 0 ~ id	2	0	0	0	0	1	18,30%	81,70%
791	P19652	model 0 ~ id	2	0	0	0	0	1	38,20%	61,80%
796	P20061	model 0 ~ id	2	0	0	0	0	1	53,20%	46,80%

797	P20073	model 0 ~ id	2	0	0	0	0	1	11,00%	89,00%
798	P20138	model 0 ~ id	2	0	0	0	0	1	75,20%	24,80%
799	P20160	model 0 ~ id	2	0	0	0	0	1	34,90%	65,10%
801	P20618	model 0 ~ id	2	0	0	0	0	1	45,40%	54,60%
806	P20851	model 0 ~ id	2	0	0	0	0	1	30,50%	69,50%
807	P20851	model 0 ~ id	2	0	0	0	0	1	42,50%	57,50%
812	P21399	model 0 ~ id	2	0	0	0	0	1	35,90%	64,10%
816	P22223	model 0 ~ id	2	0	0	0	0	1	43,70%	56,30%
819	P22314	model 0 ~ id	2	0	0	0	0	1	25,20%	74,80%
821	P22413	model 0 ~ id	2	0	0	0	0	1	20,80%	79,20%
826	P23141	model 0 ~ id	2	0	0	0	0	1	74,90%	25,10%
838	P24298	model 0 ~ id	2	0	0	0	0	1	45,10%	54,90%
844	P24855	model 0 ~ id	2	0	0	0	0	1	70,60%	29,40%
847	P25774	model 0 ~ id	2	0	0	0	0	1	44,10%	55,90%
848	P25786	model 0 ~ id	2	0	0	0	0	1	36,30%	63,70%
850	P25789	model 0 ~ id	2	0	0	0	0	1	70,00%	30,00%
851	P26022	model 0 ~ id	2	0	0	0	0	1	57,90%	42,10%
855	P26639	model 0 ~ id	2	0	0	0	0	1	3,80%	96,20%
865	P28066	model 0 ~ id	2	0	0	0	0	1	41,90%	58,10%
870	P28838	model 0 ~ id	2	0	0	0	0	1	7,10%	92,90%
873	P29350	model 0 ~ id	2	0	0	0	0	1	3,20%	96,80%
874	P29401	model 0 ~ id	2	0	0	0	0	1	35,20%	64,80%
876	P30040	model 0 ~ id	2	0	0	0	0	1	1,60%	98,40%
891	P31150	model 0 ~ id	2	0	0	0	0	1	5,30%	94,70%
894	P31944	model 0 ~ id	2	0	0	0	0	1	7,40%	92,60%
898	P31949	model 0 ~ id	2	0	0	0	0	1	9,70%	90,30%
901	P32320	model 0 ~ id	2	0	0	0	0	1	61,80%	38,20%
902	P32754	model 0 ~ id	2	0	0	0	0	1	43,00%	57,00%
905	P33908	model 0 ~ id	2	0	0	0	0	1	31,30%	68,70%
908	P34932	model 0 ~ id	2	0	0	0	0	1	15,70%	84,30%
910	P35241	model 0 ~ id	2	0	0	0	0	1	1,40%	98,60%
914	P35527	model 0 ~ id	2	0	0	0	0	1	26,30%	73,70%
915	P35555	model 0 ~ id	2	0	0	0	0	1	35,90%	64,10%
917	P35590	model 0 ~ id	2	0	0	0	0	1	76,40%	23,60%
919	P35813	model 0 ~ id	2	0	0	0	0	1	3,80%	96,20%
923	P36269	model 0 ~ id	2	0	0	0	0	1	65,30%	34,70%
927	P36980	model 0 ~ id	2	0	0	0	0	1	91,30%	8,70%
928	P37235	model 0 ~ id	2	0	0	0	0	1	6,10%	93,90%
930	P37837	model 0 ~ id	2	0	0	0	0	1	5,60%	94,40%
931	P38606	model 0 ~ id	2	0	0	0	0	1	11,60%	88,40%
933	P40121	model 0 ~ id	2	0	0	0	0	1	32,50%	67,50%
934	P40189	model 0 ~ id	2	0	0	0	0	1	44,50%	55,50%
936	P40227	model 0 ~ id	2	0	0	0	0	1	57,10%	42,90%
942	P41226	model 0 ~ id	2	0	0	0	0	1	16,40%	83,60%
950	P43235	model 0 ~ id	2	0	0	0	0	1	15,70%	84,30%
952	P43405	model 0 ~ id	2	0	0	0	0	1	26,20%	73,80%
956	P46108	model 0 ~ id	2	0	0	0	0	1	32,70%	67,30%
957	P46109	model 0 ~ id	2	0	0	0	0	1	14,70%	85,30%
959	P47755	model 0 ~ id	2	0	0	0	0	1	8,40%	91,60%
962	P48147	model 0 ~ id	2	0	0	0	0	1	19,60%	80,40%

964	P48304	model 0 ~ id	2	0	0	0	0	1	0,40%	99,60%
976	P49257	model 0 ~ id	2	0	0	0	0	1	77,50%	22,50%
978	P49588	model 0 ~ id	2	0	0	0	0	1	13,70%	86,30%
979	P49591	model 0 ~ id	2	0	0	0	0	1	12,00%	88,00%
982	P49721	model 0 ~ id	2	0	0	0	0	1	14,70%	85,30%
985	P49908	model 0 ~ id	2	0	0	0	0	1	29,70%	70,30%
987	P50453	model 0 ~ id	2	0	0	0	0	1	30,30%	69,70%
994	P51884	model 0 ~ id	2	0	0	0	0	1	61,20%	38,80%
995	P52209	model 0 ~ id	2	0	0	0	0	1	6,90%	93,10%
996	P52306	model 0 ~ id	2	0	0	0	0	1	6,90%	93,10%
999	P52788	model 0 ~ id	2	0	0	0	0	1	41,70%	58,30%
1001	P52799	model 0 ~ id	2	0	0	0	0	1	33,20%	66,80%
1007	P53634	model 0 ~ id	2	0	0	0	0	1	68,40%	31,60%
1009	P54577	model 0 ~ id	2	0	0	0	0	1	1,60%	98,40%
1013	P54920	model 0 ~ id	2	0	0	0	0	1	4,20%	95,80%
1014	P55000	model 0 ~ id	2	0	0	0	0	1	31,00%	69,00%
1015	P55056	model 0 ~ id	2	0	0	0	0	1	73,90%	26,10%
1017	P55072	model 0 ~ id	2	0	0	0	0	1	1,70%	98,30%
1022	P55291	model 0 ~ id	2	0	0	0	0	1	26,50%	73,50%
1026	P59666	model 0 ~ id	2	0	0	0	0	1	28,70%	71,30%
1030	P60842	model 0 ~ id	2	0	0	0	0	1	3,30%	96,70%
1031	P60953	model 0 ~ id	2	0	0	0	0	1	30,80%	69,20%
1035	P61081	model 0 ~ id	2	0	0	0	0	1	0,60%	99,40%
1036	P61086	model 0 ~ id	2	0	0	0	0	1	12,90%	87,10%
1041	P84077	model 0 ~ id	2	0	0	0	0	1	12,80%	87,20%
1043	P61626	model 0 ~ id	2	0	0	0	0	1	64,30%	35,70%
1047	P62136	model 0 ~ id	2	0	0	0	0	1	2,50%	97,50%
1051	P62805	model 0 ~ id	2	0	0	0	0	1	13,30%	86,70%
1054	P62942	model 0 ~ id	2	0	0	0	0	1	2,60%	97,40%
1055	P62993	model 0 ~ id	2	0	0	0	0	1	7,90%	92,10%
1067	P69892	model 0 ~ id	2	0	0	0	0	1	56,80%	43,20%
1069	P78324	model 0 ~ id	2	0	0	0	0	1	73,90%	26,10%
1070	P78371	model 0 ~ id	2	0	0	0	0	1	9,40%	90,60%
1073	P78536	model 0 ~ id	2	0	0	0	0	1	65,90%	34,10%
1077	P80511	model 0 ~ id	2	0	0	0	0	1	0,30%	99,70%
1079	P81172	model 0 ~ id	2	0	0	0	0	1	16,20%	83,80%
1080	P81605	model 0 ~ id	2	0	0	0	0	1	38,70%	61,30%
1089	Q02413	model 0 ~ id	2	0	0	0	0	1	27,30%	72,70%
1094	Q02952	model 0 ~ id	2	0	0	0	0	1	50,00%	50,00%
1095	Q02985	model 0 ~ id	2	0	0	0	0	1	78,70%	21,30%
1099	Q04446	model 0 ~ id	2	0	0	0	0	1	38,30%	61,70%
1104	Q05655	model 0 ~ id	2	0	0	0	0	1	9,10%	90,90%
1108	Q06124	model 0 ~ id	2	0	0	0	0	1	8,10%	91,90%
1109	Q06141	model 0 ~ id	2	0	0	0	0	1	26,30%	73,70%
1114	Q07075	model 0 ~ id	2	0	0	0	0	1	70,30%	29,70%
1116	Q07960	model 0 ~ id	2	0	0	0	0	1	13,40%	86,60%
1119	Q08345	model 0 ~ id	2	0	0	0	0	1	11,90%	88,10%
1121	Q08495	model 0 ~ id	2	0	0	0	0	1	0,00%	100,00%
1122	Q08554	model 0 ~ id	2	0	0	0	0	1	36,50%	63,50%
1123	Q08830	model 0 ~ id	2	0	0	0	0	1	27,70%	72,30%

1127	Q0ZGT2	model 0 ~ id	2	0	0	0	0	1	12,30%	87,70%
1128	Q10469	model 0 ~ id	2	0	0	0	0	1	38,50%	61,50%
1130	Q10472	model 0 ~ id	2	0	0	0	0	1	46,50%	53,50%
1131	Q12797	model 0 ~ id	2	0	0	0	0	1	20,40%	79,60%
1137	Q12882	model 0 ~ id	2	0	0	0	0	1	58,00%	42,00%
1138	Q12907	model 0 ~ id	2	0	0	0	0	1	54,80%	45,20%
1143	Q13217	model 0 ~ id	2	0	0	0	0	1	46,00%	54,00%
1147	Q13275	model 0 ~ id	2	0	0	0	0	1	34,60%	65,40%
1151	Q13444	model 0 ~ id	2	0	0	0	0	1	58,00%	42,00%
1153	Q13561	model 0 ~ id	2	0	0	0	0	1	4,60%	95,40%
1157	Q13740	model 0 ~ id	2	0	0	0	0	1	37,30%	62,70%
1159	Q13797	model 0 ~ id	2	0	0	0	0	1	29,50%	70,50%
1167	Q14204	model 0 ~ id	2	0	0	0	0	1	28,80%	71,20%
1171	Q14393	model 0 ~ id	2	0	0	0	0	1	1,00%	99,00%
1172	Q14508	model 0 ~ id	2	0	0	0	0	1	44,70%	55,30%
1175	Q14554	model 0 ~ id	2	0	0	0	0	1	25,60%	74,40%
1178	Q14624	model 0 ~ id	2	0	0	0	0	1	75,70%	24,30%
1181	Q14697	model 0 ~ id	2	0	0	0	0	1	49,20%	50,80%
1199	Q15485	model 0 ~ id	2	0	0	0	0	1	27,00%	73,00%
1205	Q15843	model 0 ~ id	2	0	0	0	0	1	0,10%	99,90%
1214	Q16610	model 0 ~ id	2	0	0	0	0	1	24,40%	75,60%
1220	Q16787	model 0 ~ id	2	0	0	0	0	1	51,50%	48,50%
1221	Q16832	model 0 ~ id	2	0	0	0	0	1	43,10%	56,90%
1222	Q16853	model 0 ~ id	2	0	0	0	0	1	63,30%	36,70%
1223	Q16881	model 0 ~ id	2	0	0	0	0	1	1,20%	98,80%
1225	Q27J81	model 0 ~ id	2	0	0	0	0	1	47,50%	52,50%
1230	Q504Y2	model 0 ~ id	2	0	0	0	0	1	44,40%	55,60%
1231	Q53RD9	model 0 ~ id	2	0	0	0	0	1	37,40%	62,60%
1239	Q5T6H7	model 0 ~ id	2	0	0	0	0	1	8,40%	91,60%
1241	Q5T987	model 0 ~ id	2	0	0	0	0	1	30,10%	69,90%
1244	Q5VU97	model 0 ~ id	2	0	0	0	0	1	10,50%	89,50%
1245	Q5VW32	model 0 ~ id	2	0	0	0	0	1	1,00%	99,00%
1252	Q6P179	model 0 ~ id	2	0	0	0	0	1	90,90%	9,10%
1254	Q6Q788	model 0 ~ id	2	0	0	0	0	1	47,70%	52,30%
1257	Q6UWP8	model 0 ~ id	2	0	0	0	0	1	29,10%	70,90%
1259	Q6UX71	model 0 ~ id	2	0	0	0	0	1	71,30%	28,70%
1262	Q6UXH0	model 0 ~ id	2	0	0	0	0	1	21,20%	78,80%
1263	Q6UXH9	model 0 ~ id	2	0	0	0	0	1	53,20%	46,80%
1264	Q6UXK5	model 0 ~ id	2	0	0	0	0	1	66,10%	33,90%
1265	Q6UY14	model 0 ~ id	2	0	0	0	0	1	32,60%	67,40%
1267	Q6WN34	model 0 ~ id	2	0	0	0	0	1	41,50%	58,50%
1273	Q76LX8	model 0 ~ id	2	0	0	0	0	1	43,40%	56,60%
1276	Q7L576	model 0 ~ id	2	0	0	0	0	1	2,40%	97,60%
1277	Q9H8S9	model 0 ~ id	2	0	0	0	0	1	19,90%	80,10%
1287	Q86SQ4	model 0 ~ id	2	0	0	0	0	1	64,60%	35,40%
1289	Q86T13	model 0 ~ id	2	0	0	0	0	1	68,70%	31,30%
1298	Q86X29	model 0 ~ id	2	0	0	0	0	1	23,40%	76,60%
1300	Q8IUI8	model 0 ~ id	2	0	0	0	0	1	18,90%	81,10%
1301	Q8IUK5	model 0 ~ id	2	0	0	0	0	1	42,60%	57,40%
1304	Q8IWK6	model 0 ~ id	2	0	0	0	0	1	36,80%	63,20%

1314	Q8N3T6	model 0 ~ id	2	0	0	0	0	1	18,30%	81,70%
1315	Q8N8Z6	model 0 ~ id	2	0	0	0	0	1	59,10%	40,90%
1316	Q8NBF2	model 0 ~ id	2	0	0	0	0	1	2,80%	97,20%
1319	Q8NBS9	model 0 ~ id	2	0	0	0	0	1	23,30%	76,70%
1322	Q8NEU8	model 0 ~ id	2	0	0	0	0	1	8,00%	92,00%
1327	Q8TD26	model 0 ~ id	2	0	0	0	0	1	24,40%	75,60%
1329	Q8TDQ7	model 0 ~ id	2	0	0	0	0	1	49,50%	50,50%
1335	Q8WUJ3	model 0 ~ id	2	0	0	0	0	1	38,20%	61,80%
1337	Q8WVQ1	model 0 ~ id	2	0	0	0	0	1	52,10%	47,90%
1338	Q8WWQ8	model 0 ~ id	2	0	0	0	0	1	40,40%	59,60%
1341	Q8WYP5	model 0 ~ id	2	0	0	0	0	1	97,60%	2,40%
1349	Q92686	model 0 ~ id	2	0	0	0	0	1	0,90%	99,10%
1351	Q92743	model 0 ~ id	2	0	0	0	0	1	25,60%	74,40%
1352	Q92765	model 0 ~ id	2	0	0	0	0	1	43,60%	56,40%
1356	Q92876	model 0 ~ id	2	0	0	0	0	1	52,20%	47,80%
1358	Q92954	model 0 ~ id	2	0	0	0	0	1	54,10%	45,90%
1359	Q92994	model 0 ~ id	2	0	0	0	0	1	63,40%	36,60%
1365	Q96CN7	model 0 ~ id	2	0	0	0	0	1	14,00%	86,00%
1370	Q96HC4	model 0 ~ id	2	0	0	0	0	1	14,60%	85,40%
1378	Q96KP4	model 0 ~ id	2	0	0	0	0	1	29,10%	70,90%
1380	Q96M86	model 0 ~ id	2	0	0	0	0	1	16,70%	83,30%
1389	Q99466	model 0 ~ id	2	0	0	0	0	1	30,80%	69,20%
1393	Q99674	model 0 ~ id	2	0	0	0	0	1	78,10%	21,90%
1394	Q99733	model 0 ~ id	2	0	0	0	0	1	5,90%	94,10%
1396	Q99832	model 0 ~ id	2	0	0	0	0	1	15,00%	85,00%
1402	Q9BQT9	model 0 ~ id	2	0	0	0	0	1	25,70%	74,30%
1406	Q9BS26	model 0 ~ id	2	0	0	0	0	1	70,10%	29,90%
1407	Q9BTY2	model 0 ~ id	2	0	0	0	0	1	93,80%	6,20%
1409	Q9BVJ6	model 0 ~ id	2	0	0	0	0	1	69,60%	30,40%
1410	Q9BWP8	model 0 ~ id	2	0	0	0	0	1	59,10%	40,90%
1413	Q9BXJ3	model 0 ~ id	2	0	0	0	0	1	21,90%	78,10%
1416	Q9BXX0	model 0 ~ id	2	0	0	0	0	1	33,70%	66,30%
1417	Q9BY76	model 0 ~ id	2	0	0	0	0	1	22,50%	77,50%
1421	Q9BZQ8	model 0 ~ id	2	0	0	0	0	1	25,30%	74,70%
1426	Q9GZT8	model 0 ~ id	2	0	0	0	0	1	56,50%	43,50%
1427	Q9GZX9	model 0 ~ id	2	0	0	0	0	1	18,40%	81,60%
1429	Q9H1U4	model 0 ~ id	2	0	0	0	0	1	68,50%	31,50%
1436	Q9H8L6	model 0 ~ id	2	0	0	0	0	1	47,70%	52,30%
1437	Q9H939	model 0 ~ id	2	0	0	0	0	1	26,00%	74,00%
1438	Q9H9K5	model 0 ~ id	2	0	0	0	0	1	49,70%	50,30%
1439	Q9HAT2	model 0 ~ id	2	0	0	0	0	1	25,90%	74,10%
1443	Q9HBW9	model 0 ~ id	2	0	0	0	0	1	91,80%	8,20%
1453	Q9NQS3	model 0 ~ id	2	0	0	0	0	1	51,10%	48,90%
1454	Q9NR12	model 0 ~ id	2	0	0	0	0	1	10,20%	89,80%
1455	Q9NR34	model 0 ~ id	2	0	0	0	0	1	19,80%	80,20%
1456	Q9NR99	model 0 ~ id	2	0	0	0	0	1	74,00%	26,00%
1458	Q9NRN5	model 0 ~ id	2	0	0	0	0	1	28,80%	71,20%
1461	Q9NS71	model 0 ~ id	2	0	0	0	0	1	55,60%	44,40%
1462	Q9NS98	model 0 ~ id	2	0	0	0	0	1	41,20%	58,80%
1463	Q9NSC7	model 0 ~ id	2	0	0	0	0	1	61,50%	38,50%

1466	Q9NTN9	model 0 ~ id	2	0	0	0	0	1	59,60%	40,40%	
1468	Q9NUQ9	model 0 ~ id	2	0	0	0	0	1	51,40%	48,60%	
1469	Q9NWV4	model 0 ~ id	2	0	0	0	0	1	6,40%	93,60%	
1470	Q9NY15	model 0 ~ id	2	0	0	0	0	1	43,30%	56,70%	
1471	Q9NY97	model 0 ~ id	2	0	0	0	0	1	29,30%	70,70%	
1475	Q9NZK5	model 0 ~ id	2	0	0	0	0	1	43,30%	56,70%	
1476	Q9NZP8	model 0 ~ id	2	0	0	0	0	1	44,10%	55,90%	
1485	Q9UBQ7	model 0 ~ id	2	0	0	0	0	1	10,50%	89,50%	
1494	Q9UHL4	model 0 ~ id	2	0	0	0	0	1	24,40%	75,60%	
1497	Q9UIW2	model 0 ~ id	2	0	0	0	0	1	36,80%	63,20%	
1498	Q9UJ14	model 0 ~ id	2	0	0	0	0	1	19,90%	80,10%	
1511	Q9UN19	model 0 ~ id	2	0	0	0	0	1	1,40%	98,60%	
1513	Q9UNF0	model 0 ~ id	2	0	0	0	0	1	11,00%	89,00%	
1515	Q9UNW1	model 0 ~ id	2	0	0	0	0	1	49,80%	50,20%	
1519	Q9UQ80	model 0 ~ id	2	0	0	0	0	1	4,30%	95,70%	
1520	Q9Y219	model 0 ~ id	2	0	0	0	0	1	36,30%	63,70%	
1522	Q9Y275	model 0 ~ id	2	0	0	0	0	1	26,00%	74,00%	
1528	Q9Y5C1	model 0 ~ id	2	0	0	0	0	1	34,60%	65,40%	
1537	Q9Y6W5	model 0 ~ id	2	0	0	0	0	1	3,10%	96,90%	
11	A0A075B738	model 0 ~ seroT+id	2	0	1	0	0	1	3,40%	69,70%	26,90%
19	P11940	model 0 ~ seroT+id	2	0	1	0	0	1	5,30%	20,80%	73,90%
102	Q9NQ79	model 0 ~ seroT+id	2	0	1	0	0	1	0,70%	79,10%	20,10%
210	P13501	model 0 ~ seroT+id	2	0	1	0	0	1	1,80%	67,60%	30,60%
222	D6RF35	model 0 ~ seroT+id	2	0	1	0	0	1	1,40%	96,20%	2,30%
435	O75339	model 0 ~ seroT+id	2	0	1	0	0	1	7,00%	35,00%	58,00%
450	O94769	model 0 ~ seroT+id	2	0	1	0	0	1	3,70%	21,40%	75,00%
531	P02763	model 0 ~ seroT+id	2	0	1	0	0	1	3,60%	39,90%	56,50%
846	P25391	model 0 ~ seroT+id	2	0	1	0	0	1	1,40%	36,90%	61,70%
918	P35754	model 0 ~ seroT+id	2	0	1	0	0	1	2,20%	28,50%	69,30%
921	P35968	model 0 ~ seroT+id	2	0	1	0	0	1	14,40%	57,00%	28,60%
1074	P78552	model 0 ~ seroT+id	2	0	1	0	0	1	3,50%	39,40%	57,20%
1088	Q01973	model 0 ~ seroT+id	2	0	1	0	0	1	0,50%	16,10%	83,50%
1133	Q12805	model 0 ~ seroT+id	2	0	1	0	0	1	1,50%	65,20%	33,30%
1145	Q13231	model 0 ~ seroT+id	2	0	1	0	0	1	1,10%	62,80%	36,20%
1156	Q13724	model 0 ~ seroT+id	2	0	1	0	0	1	10,30%	23,20%	66,50%
1215	Q16620	model 0 ~ seroT+id	2	0	1	0	0	1	1,50%	49,10%	49,50%
1288	Q86SR1	model 0 ~ seroT+id	2	0	1	0	0	1	4,90%	46,00%	49,10%
1312	Q8IZP9	model 0 ~ seroT+id	2	0	1	0	0	1	4,40%	26,00%	69,60%
1371	Q96HD1	model 0 ~ seroT+id	2	0	1	0	0	1	0,40%	62,20%	37,40%