Algorithm for theoretical mapping of bio-strings for co-expression: bridging genotype to phenotype

Om Prakash
Department of Computational Biology
The Institute of Mathematical Sciences, Chennai-600113
Email: mailbox4op@gmail.com

ABSTRACT

Identification of possibility of co-expression or co-performance directly from set of bio-strings as protein sequences represents an important problem of bridging between genotype to phenotype. This algorithm presents above bridging. Algorithm was implemented with proteins known from human hormone signaling system. Co-expression of proteins was cross-validated through human gene COXPRESdb v7 database. Possibility of protein-protein interaction (PPI) was also cross checked through STRING database. Results were found to be effectively fascinating. Considering the indications from results, this algorithm can be adopted for theoretical identification of co-expression or co-performance of bio-strings.

Keywords: Algorithm; Co-expression; Map; Polarized; Sequence

INTRODUCTION

Relating genotype to phenotype by co-expression of objects in a system bears an enthusiastic attention in biological research. Co-expression is well defined through multiple empirical ways. There are evidences describing relation between genotype and phenotypes at different strata of studies. As in a study co-expression of protein variants and inter-allelic effects were observed as genotype-phenotype (Shen et al., 2016). Integration was established among diet, APOE genotype and immune response (Nam et al., 2018). Host genotype and tumor phenotype was also mentioned to be mapped in case of breast cancer (Yu et al., 2015). Structural and functional aspects were also understood as genotype-phenotype correlations (Shen et al., 2016), which supported the relationships in the light of natural selection (Chen et al., 2018). Gene modules and salt stress in rice were analyzed through network mapping (Du et al.,

2019). Weighted gene co-expression was analyzed through network mapping (Eidsaa et al., 2017). Genetic mutation in CLCNKB was correlated with phenotypes in patients (Cheng et al., 2017). Beyond these, effect of *de novo* mutations in YWHAG was observed for Early-Onset Epilepsy (Guella et al., 2017). Functional modules were searched for Co-expression (Schaefer et al., 2014). Further Insights were drawn in the most common SCN5A mutation causing overlapping phenotype of long QT syndrome, Brugada syndrome, and conduction defect (Veltmann et al., 2016). Genomic and transcriptomic information were integrated for identification of genetic markers (Jung et al., 2019). Beyond these, no theoretical aspect defined till now for co-expression for bio-strings. Theoretical description about co-expression may unravel multiple aspects of co-expression other than empirical evidences.

Present algorithm presents bridging between geno & pheno types. Since, Time is the scaling factor for co-expression of two objects; therefore system objects will be known to be co-expressed if they are present at same instance of time. This factor is independent of constraint of location for expression, although multiple factors participate during expression of different factors at different locations. In present study, the theoretical seed base has been presented for bridging between bio-string-pairs (here protein sequence) and their possible co-expression. Algorithm was implemented with proteins known for human hormone signaling system. The algorithm presented a generalized base for observation of bio-string pairs in reference of their possible co-expression.

MATERIAL AND METHOD

Dataset for mapping: Protein set was collected from NCBI. Set included known protein sequences (and respective UniProt IDs) from hormone signaling systems involved in multiple diseases of human. The set included 33 unique protein objects.

Pseudo-code of Algorithm: Initial requirement for starting the algorithm was a set of bio-strings (here protein sequence), each string out of set was transformed into 'sequence memory map' and further processed for identification of co-expression bio-string pairs. Whole algorithm has been divided into 04 major steps with pseudo codes.

Step1: Developing Sequence Memory Map (SMM)

Firstly initialize the SMM as zero matrix of order u x w. In fact u is the number of unique characters in the data type (as for nucleotide sequence u = 4, and for protein sequence u = 20). Number of columns w represented window-length used for map enrichment.

Forward enrichment of SMM: Enrich the zero matrix with elemental observation of string. Each element of string throws a value into matrix in respect of their position in string as well as unique character. Memory matrix has been filled with respective value of string element.

Let O_{uxv} be a SMM zero matrix of order u x v. Let S = {s_n} be a string of length n(s). Let $Let\ U = \langle u1, u2, u3, u4, u5, u6, u7, u8, u9, u10, u11, u12, u13, u14, u15, u16, u17, u18, u19, u20 \rangle$ an ordered set, where u1,u2,u3,u4,u5,u6,u7,u8,u9,u10,u11,u12,u13,u14,u15,u16,u17,u18,u19,u20 are denoted by A,C,D,E,F,G,H,I,K,L,M,N,P,Q,R,S,T,V,W,Y respectively. (If nucleotide sequences were consider, then $U = < u1, u2, u3, u4 >$ for A,T,G,C respectively). Here w denotes window size. Let $d = \lceil n(s)/w \rceil$ the smallest integer ≥ $n(s)/w$. Let W_{nc} denote the rearranged string S in the matrix of order d x c (*Blank element will be considered, if required during rearrangement*).

$$\left[\left[((W_{nc})_{c=1}^{w}) \rightarrow (U_k)_{k=1}^{n(u)}\right] \Longrightarrow \left(O_{uv} = 1 + \sum_{x=1}^{n(u)} o_{xv}\right)_{v=1}^{w}\right]_{n=1}^{d}$$

***Back-tracing the sequence element (SE) from SMM map*:** Backward tracing has been adapted. U_u is the character of string back-traced from SMM. SMM should be updated after each cycle of back-trace.

$$\left[\left(\left(\left(n(U) * (i)_{i=1}^{n(U)}\right) + (j)_{j=1}^{v}\right) \rightarrow (z)_{z=1}^{v}\right) \wedge z\right] \Longrightarrow v$$

$$\left[\left\{(\boldsymbol{O_{uv}})_{\boldsymbol{u=1}}^{\boldsymbol{n(U)}}\right\}_{\boldsymbol{max}}\right] \Longrightarrow \text{u}$$

$$Back\ traced\ String\ element = U_u$$

Step2: Generating string pair combinations with different window size

By calculating Euclidean distance between two SMM maps, each string pair has been represented by SMM distance value. Matrix of order n x m was filled with element wise Euclidian distance been two SMMs.

$$[n\ x\ m] = euclidian((SMM)_1 \sim (SMM)_2)$$

Step3: Estimation of orthogonal components

Orthogonal components were estimated by Principal Component Analysis method

$$(p1, p2) = pca([n\ x\ m])$$

Step4: Defining Time Equivalent Factor (TEF) for co-expression

By implementing Polarization on pattern & clustering of co-expressed protein pairs, Co-expressed pairs were identified as TEF approaching zero. TEF has been defined as:

$$[(TEF \coloneqq |atan(p1/p2) \sim atan(p2/p1)|) \rightarrow (\approx zero)] \Longrightarrow Coexpressed$$

Experimental evaluation of Algorithm:

Algorithm was evaluated by mapping a set of 33 protein hormones filtered (from NCBI database) for human against multiple diseases. The protein sequences were collected with IDs and other details. Each sequence was processed through algorithm described above, memorized into SMM matrix and all paired combinations of proteins were marked on the basis of time equivalent factor (TEF). TEF <=0.1 has been tabulated and cross checked through COXPRESdb v7 database. The resulting proteins were also cross checked for their possibilities of mutual interaction through STRING database.

RESULTS & DISCUSSION

Co-expression or co-occurrence of biomolecules is an evidence of existence at same time instance or in range of small time. Therefore for theoretical identification of co-expression, it became important to define scaling factor equivalent to Time. So that biomolecules could be evaluated on the ground of co-expression. This time equivalent factor (TEF) worked as independent from constraint of location for expression. The algorithm presented a generalized base for processing of protein pairs for defining co-expression. Algorithm took input of string out of a set of protein sequences and transformed into 'sequence memory map', which was further processed for calculation of TEF for each protein pairs. The algorithm has been described in 04 parts. Sequence Memory Map (SMM) was a matrix of order 20 x w, where 20 represented twenty amino acids in a fixed order, and w represented window size of sub-string used for enrichment of SMM. Algorithm has been processed in such a way that the mapped string can be back-traced from SMM itself. To generate pattern from SMM, distance between proteins of pair was tabulated by using ten different window sizes of 06 to 15. The tabulated data was processed for calculation of orthogonal components. First two components were used for defining TEF by polarization of data. Finally TEF was used for filtering protein-pairs as co-expressed biomolecules. Algorithm was programmatically written as Java script and implemented with combinations of hormone proteins involved in human diseases. For experimental evaluation, TEF <= 0.1 was used for picking up protein pairs approaching zero. By cross checking the theoretically identified results through COXPRESdb v7 and STRING databases, fascinating results were observed.

Raw data prepared from ten different windows was processed for analysis. Protein-pair combinations were clustered on the frame of first two orthogonal components. Data found to be arranged in some specific global pattern along with local angular discrete point arrangement. Angular arrangement flow

provided indicatives towards the polarizing tendency into paired data structure (**Figure 1**). Polarity observations on orthogonal frame were plotted separately. Both Unidirectional & bidirectional discrete behavior was observed (**Figure 2**). Regression of polarized vectors spreads the data points into two classes of opposite poles. Absolute values of difference in polar spread in an equivalent indicative of time therefore were used as factor of selecting co-expression. Data points approaching zero have been considered as co-expressed. By processing the data polarization, discrete points on orthogonal frame were grouped into two clusters (**Figure 3**). Experimental evaluation of results obtained by theoretically defined co-expression via algorithm. Good extents of experimental evidences were observed out of theoretically defined co-expressed protein-pairs. Polarization segregated the datasets into two groups with different protein pairs. TEF <=0.1 based filtering provided most possible pairs. Out of the TEF filtered results, experimentally known pairs were remarked as 'EA'. (EA: Experimentally Approved (through COXPRESdb v7 Database); P: Predicted possibility) (**Table 1**). STRING database was also queried with following list for observation of PPI along with co-expression (**Table 2**). Protein-protein interaction networks by using STRING database, showing possible protein-protein interactions observed among the theoretically defined co-expression of protein pairs. BLACK linking presents co-expression, MAGENTA linking presents experimentally determined link, Light GREEN presents text-mining based interaction possibility and BLUE links present gene co-occurrence (**Figure 4**). By combined interpretation of results observed through two databases COXPRESdb and STRING, it was observed that STRING did not showed any interaction for GHSR (growth hormone secretagogue receptor), THRB (thyroid hormone receptor beta) and RNPC3 (RNA binding region (RNP1, RRM) containing 3). But COXPRESdb showed that GHSR is co-expressed with LHX3 (LIM homeobox 3), THRB is co-expressed with MC2R (melanocortin 2 receptor) & POU1F1 (POU class 1 homeobox 1), and RNPC3 is co-expressed with GNAS (GNAS complex locus). These co-expression results were also shown by present algorithm. Conclusively, the predicted co-expressions have high chances to be experimentally proved in future experiments.

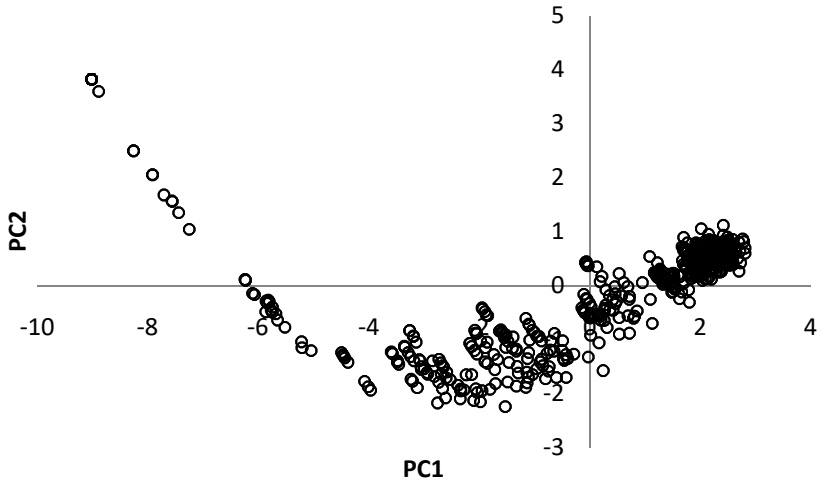

Figure 1. Protein-pair combinations were clustered on the frame of first two orthogonal components. Data found to be arranged in some specific global pattern along with local angular discrete point arrangement. Angular arrangement flow provided indicatives towards the polarizing tendency into paired data structure.

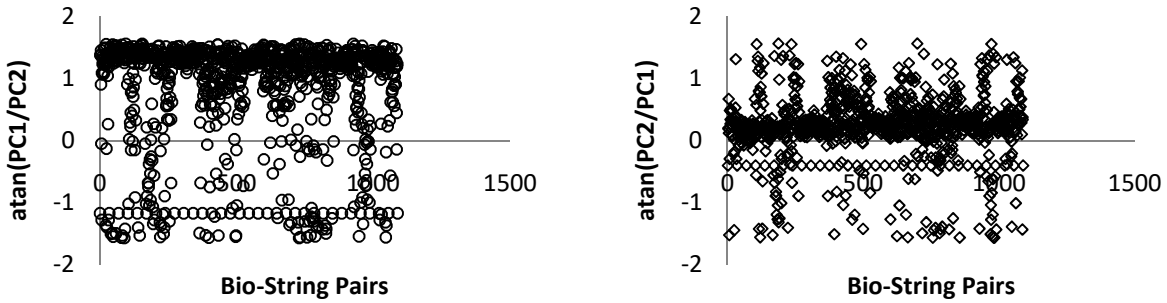

Figure 2. Polarity observations on orthogonal frame were plotted separately. Both Unidirectional & bidirectional discrete behavior was observed.

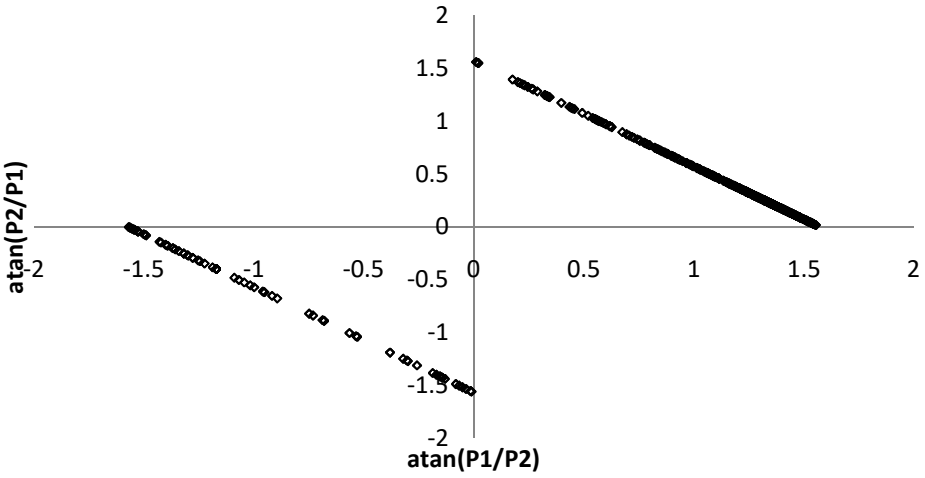

Figure 3. Regression of polarized vectors spreads the data points into two classes of opposite poles. Absolute values of difference in polar spread in an equivalent indicative of time therefore were used as factor of selecting co-expression. Data points approaching zero have been considered as co-expressed. By processing the data polarization, discrete points on orthogonal frame were grouped into two clusters.

Table 1. Experimental evaluation of results obtained by theoretically defined co-expression via algorithm. Good extents of experimental evidences were observed out of theoretically defined co-expressed protein-pairs. Polarization segregated the datasets into two groups with different protein pairs. TEF <=0.1 based filtering provided most possible pairs. Out of the TEF filtered results, experimentally known pairs were remarked as 'EA'. (**EA**: ***E****xperimentally* ***A****pproved (through* COXPRESdb v7 *Database)*; **P**: *Predicted possibility*).

Cluster no.	Protein 1	Protein 2	Entrez Gene ID (Protein 1)	Entrez Gene ID (Protein 2)	TEF	Remarks
Group-1	**Q96LT9**	**P63092**	**55599**	**2778**	**0.074841**	**EA**
	P63092	Q96LT9	2778	55599	0.074841	P
Group-2	**P10828**	**Q01718**	**7068**	**4158**	**0.022735**	**EA**
	P10828	**P28069**	**7068**	**5449**	**0.019707**	**EA**
	Q969G2	**P10644**	**89884**	**5573**	**0.02856**	**EA**
	Q969G2	**Q92847**	**89884**	**2693**	**0.012889**	**EA**
	P63092	Q9UBR4	2778	8022	0.061385	P
	P63092	P10644	2778	5573	0.060578	P
	P63092	O00170	2778	9049	0.08347	P
	P63092	**Q92847**	**2778**	**2693**	**0.002683**	**EA**
	Q9UBR4	**P63092**	**8022**	**2778**	**0.061385**	**EA**
	Q9UBR4	**Q06710**	**8022**	**7849**	**0.074517**	**EA**
	Q9UBR4	Q92847	8022	2693	0.076391	P

	Q01718	P10828	4158	7068	0.022735	P
	P41225	O00170	6658	9049	0.027282	P
	P28069	P10828	5449	7068	0.019707	P
	P10644	Q969G2	5573	89884	0.02856	P
	P10644	**P63092**	**5573**	**2778**	**0.060578**	**EA**
	Q06710	Q9UBR4	7849	8022	0.074517	P
	P32243	O60806	5015	9095	0.092159	P
	O00170	**P63092**	**9049**	**2778**	**0.08347**	**EA**
	O00170	**P41225**	**9049**	**6658**	**0.027282**	**EA**
	O60806	**P32243**	**9095**	**5015**	**0.092159**	**EA**
	Q92847	Q969G2	2693	89884	0.012889	P
	Q92847	P63092	2693	2778	0.002683	P
	Q92847	**Q9UBR4**	**2693**	**8022**	**0.076391**	**EA**

Table 2. STRING database was also queried with following list for observation of PPI along with co-expression

Gene Symbol	Function	Entrez Gene ID
GHSR	growth hormone secretagogue receptor	2693
GNAS	GNAS complex locus	2778
MC2R	melanocortin 2 receptor	4158
OTX2	orthodenticle homeobox 2	5015
POU1F1	POU class 1 homeobox 1	5449
PRKAR1A	protein kinase cAMP-dependent type I regulatory subunit alpha	5573
SOX3	SRY-box 3	6658
THRB	thyroid hormone receptor beta	7068
PAX8	paired box 8	7849
LHX3	LIM homeobox 3	8022
AIP	aryl hydrocarbon receptor interacting protein	9049
TBX19	T-box 19	9095
RNPC3	RNA binding region (RNP1, RRM) containing 3	55599
LHX4	LIM homeobox 4	89884

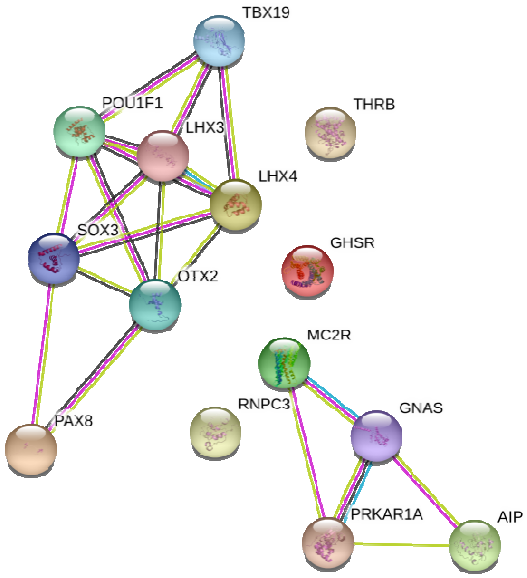

Figure 4. Protein-protein interaction networks by using STRING database, showing possible protein-protein interactions observed among the theoretically defined co-expression of protein pairs. BLACK linking presents co-expression, MAGENTA linking presents experimentally determined link, Light GREEN presents text-mining based interaction possibility and BLUE links present gene co-occurrence.

CONCLUSION

Theoretical co-expression or co-performance can be indicated directly from set of bio-strings. Algorithm has been implemented for bridging between genotype to phenotype. Considering the results found, algorithm can be adopted for theoretical identification of co-expression or co-performance of bio-strings.

Supplementary Tables: S1 (List of protein hormones related with human diseases); and S2: (Protein pairs evaluated for co-expression)

ACKNOWLEDGEMENT

Author express gratitude to *The Institute of Mathematical Sciences*, Chennai-600113, India for providing research facilities as well as DAE Post-Doctoral Fellowship (PDF 214). Author is also thankful to Dr. Amit Singh (PDF Mathematics, IMSc Chennai) for mathematical proof editing.

REFERENCES

Chen, H., Wu, C.I., He, X., 2018. The genotype–phenotype relationships in the light of natural selection. Mol. Biol. Evol. https://doi.org/10.1093/molbev/msx288

Cheng, C.J., Lo, Y.F., Chen, J.C., Huang, C.L., Lin, S.H., 2017. Functional severity of CLCNKB mutations correlates with phenotypes in patients with classic Bartter's syndrome. J. Physiol. 595, 5573–5586. https://doi.org/10.1113/JP274344

Du, Q., Campbell, M., Yu, H., Liu, K., Walia, H., Zhang, Q., Zhang, C., 2019. Network-based feature selection reveals substructures of gene modules responding to salt stress in rice. Plant Direct. https://doi.org/10.1002/pld3.154

Eidsaa, M., Stubbs, L., Almaas, E., 2017. Comparative analysis of weighted gene coexpression networks in human and mouse. PLoS One 12. https://doi.org/10.1371/journal.pone.0187611

Guella, I., McKenzie, M.B., Evans, D.M., Buerki, S.E., Toyota, E.B., Van Allen, M.I., Adam, S., Boelman, C., Bolbocean, C., Candido, T., Eydoux, P., Horvath, G., Huh, L., Nelson, T.N., Sinclair, G., van Karnebeek, C., Vercauteren, S., Suri, M., Elmslie, F., Simon, M.E.H., van Gassen, K.L.I., Héron, D., Keren, B., Nava, C., Connolly, M.B., Demos, M., Farrer, M.J., 2017. De Novo Mutations in YWHAG Cause Early-Onset Epilepsy. Am. J. Hum. Genet. https://doi.org/10.1016/j.ajhg.2017.07.004

Jung, J., Kim, G.W., Lee, B., Joo, J.W.J., Jang, W., 2019. Integrative genomic and transcriptomic analysis of genetic markers in Dupuytren's disease. BMC Med. Genomics. https://doi.org/10.1186/s12920-019-0518-3

Nam, K.N., Wolfe, C.M., Fitz, N.F., Letronne, F., Castranio, E.L., Mounier, A., Schug, J., Lefterov, I., Koldamova, R., 2018. Integrated approach reveals diet, APOE genotype and sex affect immune response in APP mice. Biochim. Biophys. Acta - Mol. Basis Dis. https://doi.org/10.1016/j.bbadis.2017.10.018

Schaefer, R.J., Briskine, R., Springer, N.M., Myers, C.L., 2014. Discovering functional modules across diverse maize transcriptomes using COB, the co-expression browser. PLoS One. https://doi.org/10.1371/journal.pone.0099193

Shen, N., Heintz, C., Thiel, C., Okun, J.G., Hoffmann, G.F., Blau, N., 2016. Co-expression of phenylalanine hydroxylase variants and effects of interallelic complementation on in vitro enzyme activity and genotype-phenotype correlation. Mol. Genet. Metab. https://doi.org/10.1016/j.ymgme.2016.01.004

Veltmann, C., Barajas-Martinez, H., Wolpert, C., Borggrefe, M., Schimpf, R., Pfeiffer, R., Cáceres, G., Burashnikov, E., Antzelevitch, C., Hu, D., 2016. Further Insights in the Most Common SCN5A Mutation Causing Overlapping Phenotype of Long QT Syndrome, Brugada Syndrome, and Conduction Defect. J. Am. Heart Assoc. https://doi.org/10.1161/JAHA.116.003379

Yu, K. Da, Wang, X., Yang, C., Zeng, X.H., Shao, Z.M., 2015. Host genotype and tumor phenotype of chemokine decoy receptors integrally affect breast cancer relapse. Oncotarget. https://doi.org/10.18632/oncotarget.4470

Supplementary Material

Table S1. List of protein hormones related with human diseases

UniProt ID	Gene names	Protein names
P01241	GH1	Somatotropin (Growth hormone) (GH) (GH-N) (Growth hormone 1) (Pituitary growth hormone)
Q06187	BTK AGMX1 ATK BPK	Tyrosine-protein kinase BTK (EC 2.7.10.2) (Agammaglobulinemia tyrosine kinase) (ATK) (B-cell progenitor kinase) (BPK) (Bruton tyrosine kinase)
P22888	LHCGR LCGR LGR2 LHRHR	Lutropin-choriogonadotropic hormone receptor (LH/CG-R) (Luteinizing hormone receptor) (LHR) (LSH-R)
P10828	THRB ERBA2 NR1A2 THR1	Thyroid hormone receptor beta (Nuclear receptor subfamily 1 group A member 2) (c-erbA-2) (c-erbA-beta)
P10912	GHR	Growth hormone receptor (GH receptor) (Somatotropin receptor) [Cleaved into: Growth hormone-binding protein (GH-binding protein) (GHBP) (Serum-binding protein)]
Q96LT9	RNPC3 KIAA1839 RBM40 RNP SNRNP65	RNA-binding region-containing protein 3 (RNA-binding motif protein 40) (RNA-binding protein 40) (U11/U12 small nuclear ribonucleoprotein 65 kDa protein) (U11/U12 snRNP 65 kDa protein) (U11/U12-65K)
Q9UBX0	HESX1 HANF	Homeobox expressed in ES cells 1 (Homeobox protein ANF) (hAnf)
Q02643	GHRHR	Growth hormone-releasing hormone receptor (GHRH receptor) (Growth hormone-releasing factor receptor) (GRF receptor) (GRFR)
P51692	STAT5B	Signal transducer and activator of transcription 5B
Q9NWF9	RNF216 TRIAD3 UBCE7IP1 ZIN	E3 ubiquitin-protein ligase RNF216 (EC 2.3.2.27) (RING finger protein 216) (RING-type E3 ubiquitin transferase RNF216) (Triad domain-containing protein 3) (Ubiquitin-conjugating enzyme 7-interacting protein 1) (Zinc finger protein inhibiting NF-kappa-B)
P16473	TSHR LGR3	Thyrotropin receptor (Thyroid-stimulating hormone receptor) (TSH-R)
Q969G2	LHX4	LIM/homeobox protein Lhx4 (LIM homeobox protein 4)
P63092	GNAS GNAS1 GSP	Guanine nucleotide-binding protein G(s) subunit alpha isoforms short (Adenylate cyclase-stimulating G alpha protein)
Q9UBR4	LHX3	LIM/homeobox protein Lhx3 (LIM homeobox protein 3)
Q01718	MC2R ACTHR	Adrenocorticotropic hormone receptor (ACTH receptor) (ACTH-R) (Adrenocorticotropin receptor) (Melanocortin receptor 2) (MC2-R)
P41225	SOX3	Transcription factor SOX-3
P07202	TPO	Thyroid peroxidase (TPO) (EC 1.11.1.8)
Q08499	PDE4D DPDE3	cAMP-specific 3',5'-cyclic phosphodiesterase 4D (EC 3.1.4.53) (DPDE3) (PDE43)
P28069	POU1F1 GHF1 PIT1	Pituitary-specific positive transcription factor 1 (PIT-1) (Growth hormone factor 1) (GHF-1)

P10644	PRKAR1A PKR1 PRKAR1 TSE1	cAMP-dependent protein kinase type I-alpha regulatory subunit (Tissue-specific extinguisher 1) (TSE1)
Q06710	PAX8	Paired box protein Pax-8
O75360	PROP1	Homeobox protein prophet of Pit-1 (PROP-1) (Pituitary-specific homeodomain factor)
P32243	OTX2	Homeobox protein OTX2 (Orthodenticle homolog 2)
P84996	GNAS GNAS1	Protein ALEX (Alternative gene product encoded by XL-exon)
O95467	GNAS GNAS1	Neuroendocrine secretory protein 55 (NESP55) [Cleaved into: LHAL tetrapeptide; GPIPIRRH peptide]
O00170	AIP XAP2	AH receptor-interacting protein (AIP) (Aryl-hydrocarbon receptor-interacting protein) (HBV X-associated protein 2) (XAP-2) (Immunophilin homolog ARA9)
Q9NSE4	IARS2	Isoleucine--tRNA ligase, mitochondrial (EC 6.1.1.5) (Isoleucyl-tRNA synthetase) (IleRS)
Q96T21	SECISBP2 SBP2	Selenocysteine insertion sequence-binding protein 2 (SECIS-binding protein 2)
O60806	TBX19 TPIT	T-box transcription factor TBX19 (T-box protein 19) (T-box factor, pituitary)
Q96P66	GPR101	Probable G-protein coupled receptor 101
Q5JWF2	GNAS GNAS1	Guanine nucleotide-binding protein G(s) subunit alpha isoforms XLas (Adenylate cyclase-stimulating G alpha protein) (Extra large alphas protein) (XLalphas)
P01225	FSHB	Follitropin subunit beta (Follicle-stimulating hormone beta subunit) (FSH-B) (FSH-beta) (Follitropin beta chain)
Q92847	GHSR	Growth hormone secretagogue receptor type 1 (GHS-R) (GH-releasing peptide receptor) (GHRP) (Ghrelin receptor)

Table S2. Protein pairs evaluated for co-expression

Pole1 value	Pole 2 value	Protein 1	Protein 2	Entrez Gene ID (Protein 1)	Entrez Gene ID (Protein 2)	TEF
-1.17026	-0.40054	P01241	P01241	2688	2688	0.769719
-0.051	-1.51979	P01241	Q96LT9	2688	55599	1.468793
-1.27733	-0.29347	P01241	Q9UBX0	2688	8820	0.983862
-1.35639	-0.21441	P01241	O75360	2688	5626	1.141974
-0.13031	-1.44049	P01241	P84996	2688	2778	1.310186
-1.39153	-0.17927	P01241	O95467	2688	2778	1.212254
-1.27752	-0.29327	P01241	P01225	2688	2488	0.984248
-1.17026	-0.40054	Q06187	Q06187	695	695	0.769719
-1.49988	-0.07091	Q06187	Q02643	695	2692	1.428971
-1.48858	-0.08221	Q06187	Q969G2	695	89884	1.40637
-1.54476	-0.02603	Q06187	P41225	695	6658	1.518728

-1.49371	-0.07709	Q06187	O00170	695	9049	1.416615
-1.17026	-0.40054	P22888	P22888	3973	3973	0.769719
-1.56279	-0.008	P22888	P63092	3973	2778	1.554793
-1.52627	-0.04453	P22888	P41225	3973	6658	1.481737
-1.5675	-0.00329	P22888	P32243	3973	5015	1.564211
-1.42112	-0.14968	P22888	O00170	3973	9049	1.271445
-1.17026	-0.40054	P10828	P10828	7068	7068	0.769719
-1.01609	-0.5547	P10828	Q96LT9	7068	55599	0.461387
-0.15211	-1.41869	P10828	P41225	7068	6658	1.266582
-0.01534	-1.55545	P10828	Q06710	7068	7849	1.540108
-0.15456	-1.41624	P10828	O60806	7068	9095	1.261683
-0.9163	-0.6545	P10828	Q96P66	7068	83550	0.261799
-1.17026	-0.40054	P10912	P10912	2690	2690	0.769719
-1.40011	-0.17068	P10912	Q02643	2690	2692	1.229429
-1.52818	-0.04262	P10912	Q9UBR4	2690	8022	1.485556
-0.051	-1.51979	Q96LT9	P01241	55599	2688	1.468793
-1.01609	-0.5547	Q96LT9	P10828	55599	7068	0.461387
-1.17026	-0.40054	Q96LT9	Q96LT9	55599	55599	0.769719
-0.89293	-0.67786	Q96LT9	Q02643	55599	2692	0.21507
-0.67979	-0.89101	Q96LT9	Q969G2	55599	89884	0.211217
-0.74798	-0.82282	Q96LT9	P63092	55599	2778	0.074841
-0.68684	-0.88396	Q96LT9	Q9UBR4	55599	8022	0.197125
-0.38026	-1.19053	Q96LT9	Q01718	55599	4158	0.81027
-1.04269	-0.5281	Q96LT9	P41225	55599	6658	0.514587
-0.30355	-1.26725	Q96LT9	P28069	55599	5449	0.963698
-0.52917	-1.04163	Q96LT9	P10644	55599	5573	0.512458
-0.95831	-0.61249	Q96LT9	Q06710	55599	7849	0.345822
-0.25782	-1.31297	Q96LT9	P32243	55599	5015	1.055148
-0.32086	-1.24993	Q96LT9	O00170	55599	9049	0.929069
-1.06735	-0.50345	Q96LT9	O60806	55599	9095	0.563906
-1.34039	-0.23041	Q96LT9	Q96P66	55599	83550	1.109984
-0.56463	-1.00617	Q96LT9	Q92847	55599	2693	0.441542
-1.27733	-0.29347	Q9UBX0	P01241	8820	2688	0.983862
-1.17026	-0.40054	Q9UBX0	Q9UBX0	8820	8820	0.769719
-1.31708	-0.25372	Q9UBX0	O75360	8820	5626	1.063354
-1.55272	-0.01808	Q9UBX0	P32243	8820	5015	1.534634
-0.16936	-1.40144	Q9UBX0	P84996	8820	2778	1.232084
-1.36777	-0.20302	Q9UBX0	O95467	8820	2778	1.16475
-1.18667	-0.38412	Q9UBX0	P01225	8820	2488	0.80255
-1.49988	-0.07091	Q02643	Q06187	2692	695	1.428971
-1.40011	-0.17068	Q02643	P10912	2692	2690	1.229429

-0.89293	-0.67786	Q02643	Q96LT9	2692	55599	0.21507
-1.17026	-0.40054	Q02643	Q02643	2692	2692	0.769719
-1.29816	-0.27264	Q02643	P84996	2692	2778	1.025521
-0.68185	-0.88895	Q02643	Q96P66	2692	83550	0.207094
-1.17026	-0.40054	P51692	P51692	6777	6777	0.769719
-1.17026	-0.40054	Q9NWF9	Q9NWF9	54476	54476	0.769719
-1.17026	-0.40054	P16473	P16473	7253	7253	0.769719
-1.48858	-0.08221	Q969G2	Q06187	89884	695	1.40637
-0.67979	-0.89101	Q969G2	Q96LT9	89884	55599	0.211217
-1.17026	-0.40054	Q969G2	Q969G2	89884	89884	0.769719
-1.52478	-0.04602	Q969G2	P84996	89884	2778	1.478757
-0.0664	-1.5044	Q969G2	Q96P66	89884	83550	1.438004
-1.56279	-0.008	P63092	P22888	2778	3973	1.554793
-0.74798	-0.82282	P63092	Q96LT9	2778	55599	0.074841
-1.17026	-0.40054	P63092	P63092	2778	2778	0.769719
-1.22312	-0.34767	P63092	P84996	2778	2778	0.875451
-0.53474	-1.03605	P63092	Q96P66	2778	83550	0.501312
-1.52818	-0.04262	Q9UBR4	P10912	8022	2690	1.485556
-0.68684	-0.88396	Q9UBR4	Q96LT9	8022	55599	0.197125
-1.17026	-0.40054	Q9UBR4	Q9UBR4	8022	8022	0.769719
-0.29883	-1.27196	Q9UBR4	Q96P66	8022	83550	0.973131
-0.38026	-1.19053	Q01718	Q96LT9	4158	55599	0.81027
-1.17026	-0.40054	Q01718	Q01718	4158	4158	0.769719
-1.08791	-0.48289	Q01718	P84996	4158	2778	0.605023
-1.54476	-0.02603	P41225	Q06187	6658	695	1.518728
-1.52627	-0.04453	P41225	P22888	6658	3973	1.481737
-0.15211	-1.41869	P41225	P10828	6658	7068	1.266582
-1.04269	-0.5281	P41225	Q96LT9	6658	55599	0.514587
-1.17026	-0.40054	P41225	P41225	6658	6658	0.769719
-0.73004	-0.84076	P41225	Q96P66	6658	83550	0.110717
-1.17026	-0.40054	P07202	P07202	7173	7173	0.769719
-1.17026	-0.40054	Q08499	Q08499	5144	5144	0.769719
-0.30355	-1.26725	P28069	Q96LT9	5449	55599	0.963698
-1.17026	-0.40054	P28069	P28069	5449	5449	0.769719
-0.03466	-1.53613	P28069	Q96P66	5449	83550	1.501472
-0.52917	-1.04163	P10644	Q96LT9	5573	55599	0.512458
-1.17026	-0.40054	P10644	P10644	5573	5573	0.769719
-1.24418	-0.32662	P10644	P84996	5573	2778	0.917556
-0.3803	-1.19049	P10644	Q96P66	5573	83550	0.810187
-0.01534	-1.55545	Q06710	P10828	7849	7068	1.540108
-0.95831	-0.61249	Q06710	Q96LT9	7849	55599	0.345822

-1.17026	-0.40054	Q06710	Q06710	7849	7849	0.769719
-0.95108	-0.61972	Q06710	Q96P66	7849	83550	0.331359
-1.35639	-0.21441	O75360	P01241	5626	2688	1.141974
-1.31708	-0.25372	O75360	Q9UBX0	5626	8820	1.063354
-1.17026	-0.40054	O75360	O75360	5626	5626	0.769719
-0.08104	-1.48975	O75360	P84996	5626	2778	1.408711
-1.42831	-0.14249	O75360	O95467	5626	2778	1.285814
-1.31761	-0.25319	O75360	P01225	5626	2488	1.064418
-1.5675	-0.00329	P32243	P22888	5015	3973	1.564211
-0.25782	-1.31297	P32243	Q96LT9	5015	55599	1.055148
-1.55272	-0.01808	P32243	Q9UBX0	5015	8820	1.534634
-1.17026	-0.40054	P32243	P32243	5015	5015	0.769719
-1.3002	-0.2706	P32243	P84996	5015	2778	1.029595
-0.01016	-1.56063	P32243	Q96P66	5015	83550	1.550472
-1.5554	-0.0154	P32243	P01225	5015	2488	1.539998
-0.13031	-1.44049	P84996	P01241	2778	2688	1.310186
-0.16936	-1.40144	P84996	Q9UBX0	2778	8820	1.232084
-1.29816	-0.27264	P84996	Q02643	2778	2692	1.025521
-1.52478	-0.04602	P84996	Q969G2	2778	89884	1.478757
-1.22312	-0.34767	P84996	P63092	2778	2778	0.875451
-1.08791	-0.48289	P84996	Q01718	2778	4158	0.605023
-1.24418	-0.32662	P84996	P10644	2778	5573	0.917556
-0.08104	-1.48975	P84996	O75360	2778	5626	1.408711
-1.3002	-0.2706	P84996	P32243	2778	5015	1.029595
-1.17026	-0.40054	P84996	P84996	2778	2778	0.769719
-0.14384	-1.42696	P84996	O95467	2778	2778	1.28312
-1.2524	-0.3184	P84996	O00170	2778	9049	0.934004
-1.53964	-0.03116	P84996	O60806	2778	9095	1.50848
-0.18606	-1.38474	P84996	P01225	2778	2488	1.198684
-1.39153	-0.17927	O95467	P01241	2778	2688	1.212254
-1.36777	-0.20302	O95467	Q9UBX0	2778	8820	1.16475
-1.42831	-0.14249	O95467	O75360	2778	5626	1.285814
-0.14384	-1.42696	O95467	P84996	2778	2778	1.28312
-1.17026	-0.40054	O95467	O95467	2778	2778	0.769719
-1.36645	-0.20434	O95467	P01225	2778	2488	1.162111
-1.49371	-0.07709	O00170	Q06187	9049	695	1.416615
-1.42112	-0.14968	O00170	P22888	9049	3973	1.271445
-0.32086	-1.24993	O00170	Q96LT9	9049	55599	0.929069
-1.2524	-0.3184	O00170	P84996	9049	2778	0.934004
-1.17026	-0.40054	O00170	O00170	9049	9049	0.769719
-0.01262	-1.55818	O00170	Q96P66	9049	83550	1.545563

-1.17026	-0.40054	Q9NSE4	Q9NSE4	55699	55699	0.769719
-1.17026	-0.40054	Q96T21	Q96T21	79048	79048	0.769719
-0.15456	-1.41624	O60806	P10828	9095	7068	1.261683
-1.06735	-0.50345	O60806	Q96LT9	9095	55599	0.563906
-1.53964	-0.03116	O60806	P84996	9095	2778	1.50848
-1.17026	-0.40054	O60806	O60806	9095	9095	0.769719
-0.99764	-0.57315	O60806	Q96P66	9095	83550	0.42449
-0.9163	-0.6545	Q96P66	P10828	83550	7068	0.261799
-1.34039	-0.23041	Q96P66	Q96LT9	83550	55599	1.109984
-0.68185	-0.88895	Q96P66	Q02643	83550	2692	0.207094
-0.0664	-1.5044	Q96P66	Q969G2	83550	89884	1.438004
-0.53474	-1.03605	Q96P66	P63092	83550	2778	0.501312
-0.29883	-1.27196	Q96P66	Q9UBR4	83550	8022	0.973131
-0.73004	-0.84076	Q96P66	P41225	83550	6658	0.110717
-0.03466	-1.53613	Q96P66	P28069	83550	5449	1.501472
-0.3803	-1.19049	Q96P66	P10644	83550	5573	0.810187
-0.95108	-0.61972	Q96P66	Q06710	83550	7849	0.331359
-0.01016	-1.56063	Q96P66	P32243	83550	5015	1.550472
-0.01262	-1.55818	Q96P66	O00170	83550	9049	1.545563
-0.99764	-0.57315	Q96P66	O60806	83550	9095	0.42449
-1.17026	-0.40054	Q96P66	Q96P66	83550	83550	0.769719
-0.14152	-1.42928	Q96P66	Q92847	83550	2693	1.287758
-1.17026	-0.40054	Q5JWF2	Q5JWF2	2778	2778	0.769719
-1.27752	-0.29327	P01225	P01241	2488	2688	0.984248
-1.18667	-0.38412	P01225	Q9UBX0	2488	8820	0.80255
-1.31761	-0.25319	P01225	O75360	2488	5626	1.064418
-1.5554	-0.0154	P01225	P32243	2488	5015	1.539998
-0.18606	-1.38474	P01225	P84996	2488	2778	1.198684
-1.36645	-0.20434	P01225	O95467	2488	2778	1.162111
-1.17026	-0.40054	P01225	P01225	2488	2488	0.769719
-0.56463	-1.00617	Q92847	Q96LT9	2693	55599	0.441542
-0.14152	-1.42928	Q92847	Q96P66	2693	83550	1.287758
-1.17026	-0.40054	Q92847	Q92847	2693	2693	0.769719
1.373299	0.197497	P01241	Q06187	2688	695	1.175802
1.379417	0.19138	P01241	P22888	2688	3973	1.188037
0.901387	0.669409	P01241	P10828	2688	7068	0.231978
1.450649	0.120147	P01241	P10912	2688	2690	1.330501
1.086596	0.484201	P01241	Q02643	2688	2692	0.602395
1.35591	0.214886	P01241	P51692	2688	6777	1.141024
1.232911	0.337885	P01241	Q9NWF9	2688	54476	0.895026
1.300964	0.269832	P01241	P16473	2688	7253	1.031132

1.060278	0.510519	P01241	Q969G2	2688	89884	0.549759
1.107344	0.463453	P01241	P63092	2688	2778	0.643891
1.249639	0.321157	P01241	Q9UBR4	2688	8022	0.928482
1.478867	0.091929	P01241	Q01718	2688	4158	1.386938
1.090885	0.479912	P01241	P41225	2688	6658	0.610973
1.338789	0.232007	P01241	P07202	2688	7173	1.106782
1.273813	0.296983	P01241	Q08499	2688	5144	0.97683
1.492543	0.078254	P01241	P28069	2688	5449	1.414289
1.210249	0.360547	P01241	P10644	2688	5573	0.849702
1.289006	0.28179	P01241	Q06710	2688	7849	1.007216
1.547491	0.023305	P01241	P32243	2688	5015	1.524186
1.277555	0.293242	P01241	O00170	2688	9049	0.984313
1.264313	0.306483	P01241	Q9NSE4	2688	55699	0.95783
1.196012	0.374785	P01241	Q96T21	2688	79048	0.821227
1.040637	0.530159	P01241	O60806	2688	9095	0.510478
0.262568	1.308228	P01241	Q96P66	2688	83550	1.045661
1.267266	0.303531	P01241	Q5JWF2	2688	2778	0.963735
1.184614	0.386182	P01241	Q92847	2688	2693	0.798433
1.373299	0.197497	Q06187	P01241	695	2688	1.175802
1.316992	0.253804	Q06187	P22888	695	3973	1.063188
1.50043	0.070366	Q06187	P10828	695	7068	1.430064
1.34857	0.222227	Q06187	P10912	695	2690	1.126343
1.431283	0.139513	Q06187	Q96LT9	695	55599	1.29177
1.401261	0.169535	Q06187	Q9UBX0	695	8820	1.231726
1.296046	0.27475	Q06187	P51692	695	6777	1.021296
1.361415	0.209382	Q06187	Q9NWF9	695	54476	1.152033
1.404128	0.166669	Q06187	P16473	695	7253	1.237459
1.418896	0.1519	Q06187	P63092	695	2778	1.266995
1.542638	0.028159	Q06187	Q9UBR4	695	8022	1.514479
1.470784	0.100012	Q06187	Q01718	695	4158	1.370772
1.276269	0.294527	Q06187	P07202	695	7173	0.981742
1.242438	0.328359	Q06187	Q08499	695	5144	0.914079
1.42306	0.147736	Q06187	P28069	695	5449	1.275324
1.509098	0.061698	Q06187	P10644	695	5573	1.4474
1.463946	0.10685	Q06187	Q06710	695	7849	1.357096
1.450077	0.120719	Q06187	O75360	695	5626	1.329358
1.530523	0.040273	Q06187	P32243	695	5015	1.490251
1.476387	0.094409	Q06187	P84996	695	2778	1.381978
1.361859	0.208938	Q06187	O95467	695	2778	1.152921
1.287082	0.283715	Q06187	Q9NSE4	695	55699	1.003367
1.325282	0.245515	Q06187	Q96T21	695	79048	1.079767

1.425578	0.145219	Q06187	O60806	695	9095	1.280359
1.524339	0.046458	Q06187	Q96P66	695	83550	1.477881
1.272306	0.29849	Q06187	Q5JWF2	695	2778	0.973815
1.41773	0.153066	Q06187	P01225	695	2488	1.264664
1.405704	0.165092	Q06187	Q92847	695	2693	1.240612
1.379417	0.19138	P22888	P01241	3973	2688	1.188037
1.316992	0.253804	P22888	Q06187	3973	695	1.063188
1.478466	0.09233	P22888	P10828	3973	7068	1.386136
1.405014	0.165782	P22888	P10912	3973	2690	1.239233
1.347204	0.223592	P22888	Q96LT9	3973	55599	1.123612
1.363203	0.207593	P22888	Q9UBX0	3973	8820	1.15561
1.422872	0.147925	P22888	Q02643	3973	2692	1.274947
1.369698	0.201098	P22888	P51692	3973	6777	1.1686
1.4176	0.153196	P22888	Q9NWF9	3973	54476	1.264404
1.420601	0.150195	P22888	P16473	3973	7253	1.270406
1.447404	0.123393	P22888	Q969G2	3973	89884	1.324011
1.537469	0.033327	P22888	Q9UBR4	3973	8022	1.504141
1.440933	0.129863	P22888	Q01718	3973	4158	1.31107
1.307605	0.263191	P22888	P07202	3973	7173	1.044414
1.320309	0.250487	P22888	Q08499	3973	5144	1.069822
1.453773	0.117024	P22888	P28069	3973	5449	1.336749
1.46422	0.106576	P22888	P10644	3973	5573	1.357643
1.46447	0.106326	P22888	Q06710	3973	7849	1.358145
1.48284	0.087957	P22888	O75360	3973	5626	1.394883
1.245642	0.325154	P22888	P84996	3973	2778	0.920488
1.336192	0.234604	P22888	O95467	3973	2778	1.101589
1.295711	0.275086	P22888	Q9NSE4	3973	55699	1.020625
1.422595	0.148202	P22888	Q96T21	3973	79048	1.274393
1.55498	0.015816	P22888	O60806	3973	9095	1.539164
1.427758	0.143039	P22888	Q96P66	3973	83550	1.284719
1.340824	0.229973	P22888	Q5JWF2	3973	2778	1.110851
1.34683	0.223966	P22888	P01225	3973	2488	1.122864
1.40101	0.169786	P22888	Q92847	3973	2693	1.231224
0.901387	0.669409	P10828	P01241	7068	2688	0.231978
1.50043	0.070366	P10828	Q06187	7068	695	1.430064
1.478466	0.09233	P10828	P22888	7068	3973	1.386136
1.469274	0.101522	P10828	P10912	7068	2690	1.367752
0.997342	0.573454	P10828	Q9UBX0	7068	8820	0.423888
0.02122	1.549576	P10828	Q02643	7068	2692	1.528356
1.498072	0.072725	P10828	P51692	7068	6777	1.425347
1.32247	0.248327	P10828	Q9NWF9	7068	54476	1.074143

1.459509	0.111287	P10828	P16473	7068	7253	1.348222
0.288807	1.281989	P10828	Q969G2	7068	89884	0.993182
0.222237	1.348559	P10828	P63092	7068	2778	1.126322
0.449477	1.12132	P10828	Q9UBR4	7068	8022	0.671843
0.774031	0.796766	P10828	Q01718	7068	4158	0.022735
1.262976	0.30782	P10828	P07202	7068	7173	0.955156
1.398481	0.172315	P10828	Q08499	7068	5144	1.226166
0.795252	0.775545	P10828	P28069	7068	5449	0.019707
0.398144	1.172652	P10828	P10644	7068	5573	0.774507
1.087061	0.483735	P10828	O75360	7068	5626	0.603326
0.706874	0.863922	P10828	P32243	7068	5015	0.157048
1.513465	0.057331	P10828	P84996	7068	2778	1.456134
0.858138	0.712658	P10828	O95467	7068	2778	0.14548
0.493149	1.077647	P10828	O00170	7068	9049	0.584497
1.239478	0.331318	P10828	Q9NSE4	7068	55699	0.90816
1.339856	0.23094	P10828	Q96T21	7068	79048	1.108916
1.32569	0.245106	P10828	Q5JWF2	7068	2778	1.080584
0.980467	0.590329	P10828	P01225	7068	2488	0.390138
0.325755	1.245042	P10828	Q92847	7068	2693	0.919287
1.450649	0.120147	P10912	P01241	2690	2688	1.330501
1.34857	0.222227	P10912	Q06187	2690	695	1.126343
1.405014	0.165782	P10912	P22888	2690	3973	1.239233
1.469274	0.101522	P10912	P10828	2690	7068	1.367752
1.334921	0.235875	P10912	Q96LT9	2690	55599	1.099046
1.416755	0.154042	P10912	Q9UBX0	2690	8820	1.262713
1.383255	0.187542	P10912	P51692	2690	6777	1.195713
1.368187	0.202609	P10912	Q9NWF9	2690	54476	1.165579
1.25292	0.317876	P10912	P16473	2690	7253	0.935045
1.437197	0.133599	P10912	Q969G2	2690	89884	1.303599
1.506426	0.06437	P10912	P63092	2690	2778	1.442056
1.370689	0.200108	P10912	Q01718	2690	4158	1.170581
1.239331	0.331465	P10912	P41225	2690	6658	0.907866
1.361993	0.208803	P10912	P07202	2690	7173	1.15319
1.46161	0.109187	P10912	Q08499	2690	5144	1.352423
1.539218	0.031579	P10912	P28069	2690	5449	1.507639
1.434003	0.136793	P10912	P10644	2690	5573	1.29721
1.450286	0.12051	P10912	Q06710	2690	7849	1.329776
1.369798	0.200999	P10912	O75360	2690	5626	1.168799
1.552789	0.018007	P10912	P32243	2690	5015	1.534782
1.391804	0.178993	P10912	P84996	2690	2778	1.212811
1.482129	0.088667	P10912	O95467	2690	2778	1.393462

1.531827	0.038969	P10912	O00170	2690	9049	1.492859
1.315406	0.25539	P10912	Q9NSE4	2690	55699	1.060016
1.318239	0.252557	P10912	Q96T21	2690	79048	1.065682
1.414154	0.156643	P10912	O60806	2690	9095	1.257511
1.449864	0.120933	P10912	Q96P66	2690	83550	1.328931
1.211346	0.359451	P10912	Q5JWF2	2690	2778	0.851895
1.399484	0.171312	P10912	P01225	2690	2488	1.228172
1.429716	0.141081	P10912	Q92847	2690	2693	1.288635
1.431283	0.139513	Q96LT9	Q06187	55599	695	1.29177
1.347204	0.223592	Q96LT9	P22888	55599	3973	1.123612
1.334921	0.235875	Q96LT9	P10912	55599	2690	1.099046
0.210896	1.3599	Q96LT9	Q9UBX0	55599	8820	1.149004
1.465641	0.105155	Q96LT9	P51692	55599	6777	1.360486
1.346372	0.224424	Q96LT9	Q9NWF9	55599	54476	1.121948
1.375672	0.195124	Q96LT9	P16473	55599	7253	1.180548
1.362634	0.208162	Q96LT9	P07202	55599	7173	1.154473
1.344559	0.226238	Q96LT9	Q08499	55599	5144	1.118321
0.010763	1.560033	Q96LT9	O75360	55599	5626	1.54927
1.386692	0.184105	Q96LT9	P84996	55599	2778	1.202587
0.590527	0.980269	Q96LT9	O95467	55599	2778	0.389743
1.4731	0.097696	Q96LT9	Q9NSE4	55599	55699	1.375404
1.332388	0.238409	Q96LT9	Q96T21	55599	79048	1.093979
1.45071	0.120086	Q96LT9	Q5JWF2	55599	2778	1.330624
0.270143	1.300653	Q96LT9	P01225	55599	2488	1.03051
1.401261	0.169535	Q9UBX0	Q06187	8820	695	1.231726
1.363203	0.207593	Q9UBX0	P22888	8820	3973	1.15561
0.997342	0.573454	Q9UBX0	P10828	8820	7068	0.423888
1.416755	0.154042	Q9UBX0	P10912	8820	2690	1.262713
0.210896	1.3599	Q9UBX0	Q96LT9	8820	55599	1.149004
1.114238	0.456558	Q9UBX0	Q02643	8820	2692	0.657681
1.396734	0.174062	Q9UBX0	P51692	8820	6777	1.222672
1.299569	0.271227	Q9UBX0	Q9NWF9	8820	54476	1.028342
1.444509	0.126287	Q9UBX0	P16473	8820	7253	1.318222
1.152866	0.41793	Q9UBX0	Q969G2	8820	89884	0.734935
1.083316	0.48748	Q9UBX0	P63092	8820	2778	0.595836
1.320472	0.250324	Q9UBX0	Q9UBR4	8820	8022	1.070149
1.519538	0.051258	Q9UBX0	Q01718	8820	4158	1.46828
1.167718	0.403078	Q9UBX0	P41225	8820	6658	0.76464
1.323535	0.247261	Q9UBX0	P07202	8820	7173	1.076274
1.311002	0.259794	Q9UBX0	Q08499	8820	5144	1.051207
1.521566	0.04923	Q9UBX0	P28069	8820	5449	1.472336

1.242879	0.327917	Q9UBX0	P10644	8820	5573	0.914962
1.362044	0.208753	Q9UBX0	Q06710	8820	7849	1.153291
1.301202	0.269594	Q9UBX0	O00170	8820	9049	1.031608
1.226141	0.344655	Q9UBX0	Q9NSE4	8820	55699	0.881485
1.208142	0.362655	Q9UBX0	Q96T21	8820	79048	0.845487
1.061803	0.508993	Q9UBX0	O60806	8820	9095	0.55281
0.20086	1.369936	Q9UBX0	Q96P66	8820	83550	1.169076
1.236102	0.334694	Q9UBX0	Q5JWF2	8820	2778	0.901408
1.241191	0.329606	Q9UBX0	Q92847	8820	2693	0.911585
1.086596	0.484201	Q02643	P01241	2692	2688	0.602395
1.422872	0.147925	Q02643	P22888	2692	3973	1.274947
0.02122	1.549576	Q02643	P10828	2692	7068	1.528356
1.114238	0.456558	Q02643	Q9UBX0	2692	8820	0.657681
1.384687	0.186109	Q02643	P51692	2692	6777	1.198577
1.394266	0.17653	Q02643	Q9NWF9	2692	54476	1.217735
1.513023	0.057773	Q02643	P16473	2692	7253	1.45525
0.550847	1.019949	Q02643	Q969G2	2692	89884	0.469102
0.58091	0.989886	Q02643	P63092	2692	2778	0.408976
0.675434	0.895363	Q02643	Q9UBR4	2692	8022	0.219929
0.835487	0.735309	Q02643	Q01718	2692	4158	0.100177
0.341347	1.22945	Q02643	P41225	2692	6658	0.888103
1.350443	0.220353	Q02643	P07202	2692	7173	1.130091
1.324253	0.246543	Q02643	Q08499	2692	5144	1.07771
0.909968	0.660829	Q02643	P28069	2692	5449	0.249139
0.562154	1.008642	Q02643	P10644	2692	5573	0.446488
0.323228	1.247568	Q02643	Q06710	2692	7849	0.92434
1.048347	0.522449	Q02643	O75360	2692	5626	0.525898
0.93049	0.640306	Q02643	P32243	2692	5015	0.290185
1.015134	0.555662	Q02643	O95467	2692	2778	0.459472
0.695151	0.875646	Q02643	O00170	2692	9049	0.180495
1.268621	0.302175	Q02643	Q9NSE4	2692	55699	0.966446
1.277836	0.29296	Q02643	Q96T21	2692	79048	0.984876
0.34239	1.228407	Q02643	O60806	2692	9095	0.886017
1.416236	0.15456	Q02643	Q5JWF2	2692	2778	1.261676
1.114238	0.456558	Q02643	P01225	2692	2488	0.657681
0.619764	0.951032	Q02643	Q92847	2692	2693	0.331268
1.35591	0.214886	P51692	P01241	6777	2688	1.141024
1.296046	0.27475	P51692	Q06187	6777	695	1.021296
1.369698	0.201098	P51692	P22888	6777	3973	1.1686
1.498072	0.072725	P51692	P10828	6777	7068	1.425347
1.383255	0.187542	P51692	P10912	6777	2690	1.195713

1.465641	0.105155	P51692	Q96LT9	6777	55599	1.360486
1.396734	0.174062	P51692	Q9UBX0	6777	8820	1.222672
1.384687	0.186109	P51692	Q02643	6777	2692	1.198577
1.307406	0.263391	P51692	Q9NWF9	6777	54476	1.044015
1.293748	0.277048	P51692	P16473	6777	7253	1.016699
1.481617	0.089179	P51692	Q969G2	6777	89884	1.392438
1.433928	0.136868	P51692	P63092	6777	2778	1.297061
1.411833	0.158963	P51692	Q9UBR4	6777	8022	1.252869
1.383796	0.187001	P51692	Q01718	6777	4158	1.196795
1.426823	0.143973	P51692	P41225	6777	6658	1.282849
1.248137	0.32266	P51692	P07202	6777	7173	0.925477
1.335368	0.235428	P51692	Q08499	6777	5144	1.09994
1.360309	0.210488	P51692	P28069	6777	5449	1.149821
1.51129	0.059507	P51692	P10644	6777	5573	1.451783
1.439319	0.131477	P51692	Q06710	6777	7849	1.307842
1.348275	0.222522	P51692	O75360	6777	5626	1.125753
1.347281	0.223516	P51692	P32243	6777	5015	1.123765
1.236194	0.334602	P51692	P84996	6777	2778	0.901591
1.454064	0.116733	P51692	O95467	6777	2778	1.337331
1.44663	0.124166	P51692	O00170	6777	9049	1.322463
1.335078	0.235718	P51692	Q9NSE4	6777	55699	1.09936
1.287642	0.283155	P51692	Q96T21	6777	79048	1.004487
1.518076	0.05272	P51692	O60806	6777	9095	1.465356
1.427745	0.143052	P51692	Q96P66	6777	83550	1.284693
1.370419	0.200378	P51692	Q5JWF2	6777	2778	1.170041
1.407656	0.16314	P51692	P01225	6777	2488	1.244516
1.264745	0.306052	P51692	Q92847	6777	2693	0.958693
1.232911	0.337885	Q9NWF9	P01241	54476	2688	0.895026
1.361415	0.209382	Q9NWF9	Q06187	54476	695	1.152033
1.4176	0.153196	Q9NWF9	P22888	54476	3973	1.264404
1.32247	0.248327	Q9NWF9	P10828	54476	7068	1.074143
1.368187	0.202609	Q9NWF9	P10912	54476	2690	1.165579
1.346372	0.224424	Q9NWF9	Q96LT9	54476	55599	1.121948
1.299569	0.271227	Q9NWF9	Q9UBX0	54476	8820	1.028342
1.394266	0.17653	Q9NWF9	Q02643	54476	2692	1.217735
1.307406	0.263391	Q9NWF9	P51692	54476	6777	1.044015
1.248925	0.321871	Q9NWF9	P16473	54476	7253	0.927054
1.350908	0.219889	Q9NWF9	Q969G2	54476	89884	1.131019
1.404705	0.166092	Q9NWF9	P63092	54476	2778	1.238613
1.426737	0.14406	Q9NWF9	Q9UBR4	54476	8022	1.282677
1.40874	0.162057	Q9NWF9	Q01718	54476	4158	1.246683

1.318848	0.251949	Q9NWF9	P41225	54476	6658	1.066899
1.202469	0.368328	Q9NWF9	P07202	54476	7173	0.834141
1.24339	0.327407	Q9NWF9	Q08499	54476	5144	0.915983
1.310833	0.259963	Q9NWF9	P28069	54476	5449	1.050869
1.086775	0.484022	Q9NWF9	P10644	54476	5573	0.602753
1.388715	0.182082	Q9NWF9	Q06710	54476	7849	1.206633
1.267145	0.303651	Q9NWF9	O75360	54476	5626	0.963494
1.15046	0.420336	Q9NWF9	P32243	54476	5015	0.730124
1.374186	0.19661	Q9NWF9	P84996	54476	2778	1.177576
1.342914	0.227883	Q9NWF9	O95467	54476	2778	1.115031
1.369729	0.201067	Q9NWF9	O00170	54476	9049	1.168661
1.268226	0.30257	Q9NWF9	Q9NSE4	54476	55699	0.965657
1.386591	0.184205	Q9NWF9	Q96T21	54476	79048	1.202386
1.442912	0.127884	Q9NWF9	O60806	54476	9095	1.315028
1.362986	0.20781	Q9NWF9	Q96P66	54476	83550	1.155176
1.322354	0.248443	Q9NWF9	Q5JWF2	54476	2778	1.073911
1.288588	0.282209	Q9NWF9	P01225	54476	2488	1.006379
1.29724	0.273556	Q9NWF9	Q92847	54476	2693	1.023684
1.300964	0.269832	P16473	P01241	7253	2688	1.031132
1.404128	0.166669	P16473	Q06187	7253	695	1.237459
1.420601	0.150195	P16473	P22888	7253	3973	1.270406
1.459509	0.111287	P16473	P10828	7253	7068	1.348222
1.25292	0.317876	P16473	P10912	7253	2690	0.935045
1.375672	0.195124	P16473	Q96LT9	7253	55599	1.180548
1.444509	0.126287	P16473	Q9UBX0	7253	8820	1.318222
1.513023	0.057773	P16473	Q02643	7253	2692	1.45525
1.293748	0.277048	P16473	P51692	7253	6777	1.016699
1.248925	0.321871	P16473	Q9NWF9	7253	54476	0.927054
1.482986	0.08781	P16473	Q969G2	7253	89884	1.395176
1.339251	0.231545	P16473	P63092	7253	2778	1.107706
1.43281	0.137986	P16473	Q9UBR4	7253	8022	1.294823
1.376277	0.194519	P16473	Q01718	7253	4158	1.181758
1.399421	0.171376	P16473	P41225	7253	6658	1.228045
1.250884	0.319913	P16473	P07202	7253	7173	0.930971
1.249884	0.320913	P16473	Q08499	7253	5144	0.928971
1.341224	0.229572	P16473	P28069	7253	5449	1.111651
1.37665	0.194146	P16473	P10644	7253	5573	1.182505
1.409073	0.161723	P16473	Q06710	7253	7849	1.24735
1.44642	0.124376	P16473	O75360	7253	5626	1.322044
1.393419	0.177377	P16473	P32243	7253	5015	1.216041
1.412979	0.157817	P16473	P84996	7253	2778	1.255162

1.362069	0.208728	P16473	O95467	7253	2778	1.153341
1.463919	0.106877	P16473	O00170	7253	9049	1.357042
1.298326	0.272471	P16473	Q9NSE4	7253	55699	1.025855
1.274305	0.296492	P16473	Q96T21	7253	79048	0.977813
1.383992	0.186804	P16473	O60806	7253	9095	1.197188
1.315581	0.255216	P16473	Q96P66	7253	83550	1.060365
1.330701	0.240096	P16473	Q5JWF2	7253	2778	1.090605
1.433063	0.137734	P16473	P01225	7253	2488	1.295329
1.483427	0.08737	P16473	Q92847	7253	2693	1.396057
1.060278	0.510519	Q969G2	P01241	89884	2688	0.549759
1.447404	0.123393	Q969G2	P22888	89884	3973	1.324011
0.288807	1.281989	Q969G2	P10828	89884	7068	0.993182
1.437197	0.133599	Q969G2	P10912	89884	2690	1.303599
1.152866	0.41793	Q969G2	Q9UBX0	89884	8820	0.734935
0.550847	1.019949	Q969G2	Q02643	89884	2692	0.469102
1.481617	0.089179	Q969G2	P51692	89884	6777	1.392438
1.350908	0.219889	Q969G2	Q9NWF9	89884	54476	1.131019
1.482986	0.08781	Q969G2	P16473	89884	7253	1.395176
0.599694	0.971102	Q969G2	P63092	89884	2778	0.371409
0.914923	0.655873	Q969G2	Q9UBR4	89884	8022	0.25905
0.991171	0.579625	Q969G2	Q01718	89884	4158	0.411545
0.71947	0.851327	Q969G2	P41225	89884	6658	0.131857
1.257159	0.313637	Q969G2	P07202	89884	7173	0.943521
1.450515	0.120282	Q969G2	Q08499	89884	5144	1.330233
0.949388	0.621408	Q969G2	P28069	89884	5449	0.32798
0.799678	0.771118	Q969G2	P10644	89884	5573	0.02856
0.567262	1.003534	Q969G2	Q06710	89884	7849	0.436272
1.070709	0.500087	Q969G2	O75360	89884	5626	0.570622
1.03159	0.539206	Q969G2	P32243	89884	5015	0.492384
1.096186	0.47461	Q969G2	O95467	89884	2778	0.621576
0.841582	0.729215	Q969G2	O00170	89884	9049	0.112367
1.213473	0.357323	Q969G2	Q9NSE4	89884	55699	0.85615
1.453064	0.117732	Q969G2	Q96T21	89884	79048	1.335332
0.72843	0.842366	Q969G2	O60806	89884	9095	0.113937
1.29766	0.273136	Q969G2	Q5JWF2	89884	2778	1.024525
1.146281	0.424516	Q969G2	P01225	89884	2488	0.721765
0.778954	0.791843	Q969G2	Q92847	89884	2693	0.012889
1.107344	0.463453	P63092	P01241	2778	2688	0.643891
1.418896	0.1519	P63092	Q06187	2778	695	1.266995
0.222237	1.348559	P63092	P10828	2778	7068	1.126322
1.506426	0.06437	P63092	P10912	2778	2690	1.442056

1.083316	0.48748	P63092	Q9UBX0	2778	8820	0.595836
0.58091	0.989886	P63092	Q02643	2778	2692	0.408976
1.433928	0.136868	P63092	P51692	2778	6777	1.297061
1.404705	0.166092	P63092	Q9NWF9	2778	54476	1.238613
1.339251	0.231545	P63092	P16473	2778	7253	1.107706
0.599694	0.971102	P63092	Q969G2	2778	89884	0.371409
0.754706	0.816091	P63092	Q9UBR4	2778	8022	0.061385
0.913011	0.657786	P63092	Q01718	2778	4158	0.255225
0.435493	1.135304	P63092	P41225	2778	6658	0.699811
1.306075	0.264721	P63092	P07202	2778	7173	1.041354
1.260101	0.310695	P63092	Q08499	2778	5144	0.949406
0.866994	0.703802	P63092	P28069	2778	5449	0.163192
0.755109	0.815687	P63092	P10644	2778	5573	0.060578
0.552386	1.01841	P63092	Q06710	2778	7849	0.466024
1.053037	0.517759	P63092	O75360	2778	5626	0.535278
0.876218	0.694578	P63092	P32243	2778	5015	0.181641
1.017381	0.553415	P63092	O95467	2778	2778	0.463966
0.743663	0.827133	P63092	O00170	2778	9049	0.08347
1.409249	0.161547	P63092	Q9NSE4	2778	55699	1.247702
1.427783	0.143014	P63092	Q96T21	2778	79048	1.284769
0.245777	1.325019	P63092	O60806	2778	9095	1.079242
1.309296	0.2615	P63092	Q5JWF2	2778	2778	1.047797
1.063493	0.507303	P63092	P01225	2778	2488	0.55619
0.78674	0.784057	P63092	Q92847	2778	2693	0.002683
1.249639	0.321157	Q9UBR4	P01241	8022	2688	0.928482
1.542638	0.028159	Q9UBR4	Q06187	8022	695	1.514479
1.537469	0.033327	Q9UBR4	P22888	8022	3973	1.504141
0.449477	1.12132	Q9UBR4	P10828	8022	7068	0.671843
1.320472	0.250324	Q9UBR4	Q9UBX0	8022	8820	1.070149
0.675434	0.895363	Q9UBR4	Q02643	8022	2692	0.219929
1.411833	0.158963	Q9UBR4	P51692	8022	6777	1.252869
1.426737	0.14406	Q9UBR4	Q9NWF9	8022	54476	1.282677
1.43281	0.137986	Q9UBR4	P16473	8022	7253	1.294823
0.914923	0.655873	Q9UBR4	Q969G2	8022	89884	0.25905
0.754706	0.816091	Q9UBR4	P63092	8022	2778	0.061385
0.989862	0.580934	Q9UBR4	Q01718	8022	4158	0.408928
0.925398	0.645398	Q9UBR4	P41225	8022	6658	0.280001
1.307778	0.263018	Q9UBR4	P07202	8022	7173	1.044761
1.33687	0.233927	Q9UBR4	Q08499	8022	5144	1.102943
1.025694	0.545102	Q9UBR4	P28069	8022	5449	0.480592
0.934738	0.636058	Q9UBR4	P10644	8022	5573	0.298681

0.822657	0.748139	Q9UBR4	Q06710	8022	7849	0.074517
1.283496	0.287301	Q9UBR4	O75360	8022	5626	0.996195
1.115902	0.454894	Q9UBR4	P32243	8022	5015	0.661008
0.344423	1.226374	Q9UBR4	P84996	8022	2778	0.881951
1.286618	0.284178	Q9UBR4	O95467	8022	2778	1.002439
0.967121	0.603675	Q9UBR4	O00170	8022	9049	0.363446
1.272805	0.297992	Q9UBR4	Q9NSE4	8022	55699	0.974813
1.409325	0.161471	Q9UBR4	Q96T21	8022	79048	1.247853
0.520566	1.05023	Q9UBR4	O60806	8022	9095	0.529664
1.245408	0.325388	Q9UBR4	Q5JWF2	8022	2778	0.92002
1.320472	0.250324	Q9UBR4	P01225	8022	2488	1.070149
0.823594	0.747202	Q9UBR4	Q92847	8022	2693	0.076391
1.478867	0.091929	Q01718	P01241	4158	2688	1.386938
1.470784	0.100012	Q01718	Q06187	4158	695	1.370772
1.440933	0.129863	Q01718	P22888	4158	3973	1.31107
0.774031	0.796766	Q01718	P10828	4158	7068	0.022735
1.370689	0.200108	Q01718	P10912	4158	2690	1.170581
1.519538	0.051258	Q01718	Q9UBX0	4158	8820	1.46828
0.835487	0.735309	Q01718	Q02643	4158	2692	0.100177
1.383796	0.187001	Q01718	P51692	4158	6777	1.196795
1.40874	0.162057	Q01718	Q9NWF9	4158	54476	1.246683
1.376277	0.194519	Q01718	P16473	4158	7253	1.181758
0.991171	0.579625	Q01718	Q969G2	4158	89884	0.411545
0.913011	0.657786	Q01718	P63092	4158	2778	0.255225
0.989862	0.580934	Q01718	Q9UBR4	4158	8022	0.408928
0.883619	0.687178	Q01718	P41225	4158	6658	0.196441
1.346074	0.224722	Q01718	P07202	4158	7173	1.121352
1.361793	0.209003	Q01718	Q08499	4158	5144	1.15279
1.336378	0.234419	Q01718	P28069	4158	5449	1.101959
1.100489	0.470308	Q01718	P10644	4158	5573	0.630181
1.011722	0.559074	Q01718	Q06710	4158	7849	0.452648
1.501535	0.069261	Q01718	O75360	4158	5626	1.432274
1.3739	0.196896	Q01718	P32243	4158	5015	1.177004
1.43207	0.138727	Q01718	O95467	4158	2778	1.293343
1.133558	0.437238	Q01718	O00170	4158	9049	0.69632
1.224031	0.346765	Q01718	Q9NSE4	4158	55699	0.877265
1.23534	0.335457	Q01718	Q96T21	4158	79048	0.899883
1.029536	0.54126	Q01718	O60806	4158	9095	0.488276
0.018742	1.552055	Q01718	Q96P66	4158	83550	1.533313
1.229742	0.341054	Q01718	Q5JWF2	4158	2778	0.888688
1.524662	0.046135	Q01718	P01225	4158	2488	1.478527

1.079356	0.49144	Q01718	Q92847	4158	2693	0.587916
1.090885	0.479912	P41225	P01241	6658	2688	0.610973
1.239331	0.331465	P41225	P10912	6658	2690	0.907866
1.167718	0.403078	P41225	Q9UBX0	6658	8820	0.76464
0.341347	1.22945	P41225	Q02643	6658	2692	0.888103
1.426823	0.143973	P41225	P51692	6658	6777	1.282849
1.318848	0.251949	P41225	Q9NWF9	6658	54476	1.066899
1.399421	0.171376	P41225	P16473	6658	7253	1.228045
0.71947	0.851327	P41225	Q969G2	6658	89884	0.131857
0.435493	1.135304	P41225	P63092	6658	2778	0.699811
0.925398	0.645398	P41225	Q9UBR4	6658	8022	0.280001
0.883619	0.687178	P41225	Q01718	6658	4158	0.196441
1.192374	0.378422	P41225	P07202	6658	7173	0.813952
1.37574	0.195056	P41225	Q08499	6658	5144	1.180685
0.938106	0.63269	P41225	P28069	6658	5449	0.305415
0.5614	1.009397	P41225	P10644	6658	5573	0.447997
0.601149	0.969647	P41225	Q06710	6658	7849	0.368498
1.191901	0.378896	P41225	O75360	6658	5626	0.813005
1.057953	0.512843	P41225	P32243	6658	5015	0.545111
1.479301	0.091495	P41225	P84996	6658	2778	1.387806
1.024845	0.545952	P41225	O95467	6658	2778	0.478893
0.799039	0.771757	P41225	O00170	6658	9049	0.027282
1.299074	0.271722	P41225	Q9NSE4	6658	55699	1.027352
1.232987	0.33781	P41225	Q96T21	6658	79048	0.895177
0.541078	1.029718	P41225	O60806	6658	9095	0.48864
1.302927	0.267869	P41225	Q5JWF2	6658	2778	1.035058
1.160764	0.410032	P41225	P01225	6658	2488	0.750732
0.617378	0.953418	P41225	Q92847	6658	2693	0.336041
1.338789	0.232007	P07202	P01241	7173	2688	1.106782
1.276269	0.294527	P07202	Q06187	7173	695	0.981742
1.307605	0.263191	P07202	P22888	7173	3973	1.044414
1.262976	0.30782	P07202	P10828	7173	7068	0.955156
1.361993	0.208803	P07202	P10912	7173	2690	1.15319
1.362634	0.208162	P07202	Q96LT9	7173	55599	1.154473
1.323535	0.247261	P07202	Q9UBX0	7173	8820	1.076274
1.350443	0.220353	P07202	Q02643	7173	2692	1.130091
1.248137	0.32266	P07202	P51692	7173	6777	0.925477
1.202469	0.368328	P07202	Q9NWF9	7173	54476	0.834141
1.250884	0.319913	P07202	P16473	7173	7253	0.930971
1.257159	0.313637	P07202	Q969G2	7173	89884	0.943521
1.306075	0.264721	P07202	P63092	7173	2778	1.041354

1.307778	0.263018	P07202	Q9UBR4	7173	8022	1.044761
1.346074	0.224722	P07202	Q01718	7173	4158	1.121352
1.192374	0.378422	P07202	P41225	7173	6658	0.813952
1.384651	0.186146	P07202	Q08499	7173	5144	1.198505
1.293259	0.277538	P07202	P28069	7173	5449	1.015721
1.283967	0.286829	P07202	P10644	7173	5573	0.997138
1.292017	0.278779	P07202	Q06710	7173	7849	1.013238
1.286176	0.28462	P07202	O75360	7173	5626	1.001556
1.267496	0.3033	P07202	P32243	7173	5015	0.964196
1.238581	0.332215	P07202	P84996	7173	2778	0.906366
1.30601	0.264786	P07202	O95467	7173	2778	1.041224
1.274641	0.296155	P07202	O00170	7173	9049	0.978486
1.280999	0.289797	P07202	Q9NSE4	7173	55699	0.991202
1.138106	0.43269	P07202	Q96T21	7173	79048	0.705416
1.2119	0.358897	P07202	O60806	7173	9095	0.853003
1.298415	0.272381	P07202	Q96P66	7173	83550	1.026033
1.224617	0.346179	P07202	Q5JWF2	7173	2778	0.878438
1.332645	0.238151	P07202	P01225	7173	2488	1.094494
1.295971	0.274825	P07202	Q92847	7173	2693	1.021146
1.273813	0.296983	Q08499	P01241	5144	2688	0.97683
1.242438	0.328359	Q08499	Q06187	5144	695	0.914079
1.320309	0.250487	Q08499	P22888	5144	3973	1.069822
1.398481	0.172315	Q08499	P10828	5144	7068	1.226166
1.46161	0.109187	Q08499	P10912	5144	2690	1.352423
1.344559	0.226238	Q08499	Q96LT9	5144	55599	1.118321
1.311002	0.259794	Q08499	Q9UBX0	5144	8820	1.051207
1.324253	0.246543	Q08499	Q02643	5144	2692	1.07771
1.335368	0.235428	Q08499	P51692	5144	6777	1.09994
1.24339	0.327407	Q08499	Q9NWF9	5144	54476	0.915983
1.249884	0.320913	Q08499	P16473	5144	7253	0.928971
1.450515	0.120282	Q08499	Q969G2	5144	89884	1.330233
1.260101	0.310695	Q08499	P63092	5144	2778	0.949406
1.33687	0.233927	Q08499	Q9UBR4	5144	8022	1.102943
1.361793	0.209003	Q08499	Q01718	5144	4158	1.15279
1.37574	0.195056	Q08499	P41225	5144	6658	1.180685
1.384651	0.186146	Q08499	P07202	5144	7173	1.198505
1.333114	0.237683	Q08499	P28069	5144	5449	1.095431
1.180279	0.390517	Q08499	P10644	5144	5573	0.789761
1.425399	0.145397	Q08499	Q06710	5144	7849	1.280003
1.31381	0.256987	Q08499	O75360	5144	5626	1.056823
1.417162	0.153635	Q08499	P32243	5144	5015	1.263527

1.260009	0.310788	Q08499	P84996	5144	2778	0.949221
1.291273	0.279523	Q08499	O95467	5144	2778	1.01175
1.486163	0.084633	Q08499	O00170	5144	9049	1.40153
1.296319	0.274477	Q08499	Q9NSE4	5144	55699	1.021842
1.240415	0.330382	Q08499	Q96T21	5144	79048	0.910033
1.457692	0.113104	Q08499	O60806	5144	9095	1.344588
1.345676	0.22512	Q08499	Q96P66	5144	83550	1.120556
1.307771	0.263025	Q08499	Q5JWF2	5144	2778	1.044746
1.299307	0.271489	Q08499	P01225	5144	2488	1.027818
1.321346	0.24945	Q08499	Q92847	5144	2693	1.071896
1.492543	0.078254	P28069	P01241	5449	2688	1.414289
1.42306	0.147736	P28069	Q06187	5449	695	1.275324
1.453773	0.117024	P28069	P22888	5449	3973	1.336749
0.795252	0.775545	P28069	P10828	5449	7068	0.019707
1.539218	0.031579	P28069	P10912	5449	2690	1.507639
1.521566	0.04923	P28069	Q9UBX0	5449	8820	1.472336
0.909968	0.660829	P28069	Q02643	5449	2692	0.249139
1.360309	0.210488	P28069	P51692	5449	6777	1.149821
1.310833	0.259963	P28069	Q9NWF9	5449	54476	1.050869
1.341224	0.229572	P28069	P16473	5449	7253	1.111651
0.949388	0.621408	P28069	Q969G2	5449	89884	0.32798
0.866994	0.703802	P28069	P63092	5449	2778	0.163192
1.025694	0.545102	P28069	Q9UBR4	5449	8022	0.480592
1.336378	0.234419	P28069	Q01718	5449	4158	1.101959
0.938106	0.63269	P28069	P41225	5449	6658	0.305415
1.293259	0.277538	P28069	P07202	5449	7173	1.015721
1.333114	0.237683	P28069	Q08499	5449	5144	1.095431
1.114635	0.456161	P28069	P10644	5449	5573	0.658474
0.879032	0.691765	P28069	Q06710	5449	7849	0.187267
1.458223	0.112573	P28069	O75360	5449	5626	1.345649
1.353623	0.217173	P28069	P32243	5449	5015	1.13645
1.204363	0.366433	P28069	P84996	5449	2778	0.83793
1.485822	0.084974	P28069	O95467	5449	2778	1.400848
1.161033	0.409763	P28069	O00170	5449	9049	0.751269
1.214772	0.356025	P28069	Q9NSE4	5449	55699	0.858747
1.349528	0.221268	P28069	Q96T21	5449	79048	1.128261
0.848804	0.721992	P28069	O60806	5449	9095	0.126812
1.215962	0.354835	P28069	Q5JWF2	5449	2778	0.861127
1.514932	0.055864	P28069	P01225	5449	2488	1.459068
1.066575	0.504222	P28069	Q92847	5449	2693	0.562353
1.210249	0.360547	P10644	P01241	5573	2688	0.849702

1.509098	0.061698	P10644	Q06187	5573	695	1.4474
1.46422	0.106576	P10644	P22888	5573	3973	1.357643
0.398144	1.172652	P10644	P10828	5573	7068	0.774507
1.434003	0.136793	P10644	P10912	5573	2690	1.29721
1.242879	0.327917	P10644	Q9UBX0	5573	8820	0.914962
0.562154	1.008642	P10644	Q02643	5573	2692	0.446488
1.51129	0.059507	P10644	P51692	5573	6777	1.451783
1.086775	0.484022	P10644	Q9NWF9	5573	54476	0.602753
1.37665	0.194146	P10644	P16473	5573	7253	1.182505
0.799678	0.771118	P10644	Q969G2	5573	89884	0.02856
0.755109	0.815687	P10644	P63092	5573	2778	0.060578
0.934738	0.636058	P10644	Q9UBR4	5573	8022	0.298681
1.100489	0.470308	P10644	Q01718	5573	4158	0.630181
0.5614	1.009397	P10644	P41225	5573	6658	0.447997
1.283967	0.286829	P10644	P07202	5573	7173	0.997138
1.180279	0.390517	P10644	Q08499	5573	5144	0.789761
1.114635	0.456161	P10644	P28069	5573	5449	0.658474
0.569726	1.00107	P10644	Q06710	5573	7849	0.431344
1.244802	0.325994	P10644	O75360	5573	5626	0.918808
1.158278	0.412518	P10644	P32243	5573	5015	0.74576
1.185023	0.385773	P10644	O95467	5573	2778	0.799249
0.897746	0.673051	P10644	O00170	5573	9049	0.224695
1.08998	0.480816	P10644	Q9NSE4	5573	55699	0.609163
1.314192	0.256604	P10644	Q96T21	5573	79048	1.057588
0.457144	1.113652	P10644	O60806	5573	9095	0.656508
1.181285	0.389511	P10644	Q5JWF2	5573	2778	0.791774
1.249079	0.321718	P10644	P01225	5573	2488	0.927361
0.884027	0.686769	P10644	Q92847	5573	2693	0.197259
1.289006	0.28179	Q06710	P01241	7849	2688	1.007216
1.463946	0.10685	Q06710	Q06187	7849	695	1.357096
1.46447	0.106326	Q06710	P22888	7849	3973	1.358145
1.450286	0.12051	Q06710	P10912	7849	2690	1.329776
1.362044	0.208753	Q06710	Q9UBX0	7849	8820	1.153291
0.323228	1.247568	Q06710	Q02643	7849	2692	0.92434
1.439319	0.131477	Q06710	P51692	7849	6777	1.307842
1.388715	0.182082	Q06710	Q9NWF9	7849	54476	1.206633
1.409073	0.161723	Q06710	P16473	7849	7253	1.24735
0.567262	1.003534	Q06710	Q969G2	7849	89884	0.436272
0.552386	1.01841	Q06710	P63092	7849	2778	0.466024
0.822657	0.748139	Q06710	Q9UBR4	7849	8022	0.074517
1.011722	0.559074	Q06710	Q01718	7849	4158	0.452648

0.601149	0.969647	Q06710	P41225	7849	6658	0.368498
1.292017	0.278779	Q06710	P07202	7849	7173	1.013238
1.425399	0.145397	Q06710	Q08499	7849	5144	1.280003
0.879032	0.691765	Q06710	P28069	7849	5449	0.187267
0.569726	1.00107	Q06710	P10644	7849	5573	0.431344
1.321753	0.249043	Q06710	O75360	7849	5626	1.07271
1.094416	0.476381	Q06710	P32243	7849	5015	0.618035
1.171135	0.399661	Q06710	P84996	7849	2778	0.771473
1.276541	0.294255	Q06710	O95467	7849	2778	0.982286
0.969472	0.601324	Q06710	O00170	7849	9049	0.368148
1.155209	0.415587	Q06710	Q9NSE4	7849	55699	0.739622
1.195045	0.375752	Q06710	Q96T21	7849	79048	0.819293
0.62742	0.943376	Q06710	O60806	7849	9095	0.315956
1.294907	0.27589	Q06710	Q5JWF2	7849	2778	1.019017
1.351299	0.219497	Q06710	P01225	7849	2488	1.131802
0.556829	1.013968	Q06710	Q92847	7849	2693	0.457139
1.450077	0.120719	O75360	Q06187	5626	695	1.329358
1.48284	0.087957	O75360	P22888	5626	3973	1.394883
1.087061	0.483735	O75360	P10828	5626	7068	0.603326
1.369798	0.200999	O75360	P10912	5626	2690	1.168799
0.010763	1.560033	O75360	Q96LT9	5626	55599	1.54927
1.048347	0.522449	O75360	Q02643	5626	2692	0.525898
1.348275	0.222522	O75360	P51692	5626	6777	1.125753
1.267145	0.303651	O75360	Q9NWF9	5626	54476	0.963494
1.44642	0.124376	O75360	P16473	5626	7253	1.322044
1.070709	0.500087	O75360	Q969G2	5626	89884	0.570622
1.053037	0.517759	O75360	P63092	5626	2778	0.535278
1.283496	0.287301	O75360	Q9UBR4	5626	8022	0.996195
1.501535	0.069261	O75360	Q01718	5626	4158	1.432274
1.191901	0.378896	O75360	P41225	5626	6658	0.813005
1.286176	0.28462	O75360	P07202	5626	7173	1.001556
1.31381	0.256987	O75360	Q08499	5626	5144	1.056823
1.458223	0.112573	O75360	P28069	5626	5449	1.345649
1.244802	0.325994	O75360	P10644	5626	5573	0.918808
1.321753	0.249043	O75360	Q06710	5626	7849	1.07271
1.543303	0.027493	O75360	P32243	5626	5015	1.51581
1.285706	0.28509	O75360	O00170	5626	9049	1.000616
1.226141	0.344655	O75360	Q9NSE4	5626	55699	0.881485
1.164328	0.406469	O75360	Q96T21	5626	79048	0.757859
1.098794	0.472003	O75360	O60806	5626	9095	0.626791
0.17642	1.394376	O75360	Q96P66	5626	83550	1.217957

1.298541	0.272255	O75360	Q5JWF2	5626	2778	1.026286
1.172249	0.398547	O75360	Q92847	5626	2693	0.773702
1.547491	0.023305	P32243	P01241	5015	2688	1.524186
1.530523	0.040273	P32243	Q06187	5015	695	1.490251
0.706874	0.863922	P32243	P10828	5015	7068	0.157048
1.552789	0.018007	P32243	P10912	5015	2690	1.534782
0.93049	0.640306	P32243	Q02643	5015	2692	0.290185
1.347281	0.223516	P32243	P51692	5015	6777	1.123765
1.15046	0.420336	P32243	Q9NWF9	5015	54476	0.730124
1.393419	0.177377	P32243	P16473	5015	7253	1.216041
1.03159	0.539206	P32243	Q969G2	5015	89884	0.492384
0.876218	0.694578	P32243	P63092	5015	2778	0.181641
1.115902	0.454894	P32243	Q9UBR4	5015	8022	0.661008
1.3739	0.196896	P32243	Q01718	5015	4158	1.177004
1.057953	0.512843	P32243	P41225	5015	6658	0.545111
1.267496	0.3033	P32243	P07202	5015	7173	0.964196
1.417162	0.153635	P32243	Q08499	5015	5144	1.263527
1.353623	0.217173	P32243	P28069	5015	5449	1.13645
1.158278	0.412518	P32243	P10644	5015	5573	0.74576
1.094416	0.476381	P32243	Q06710	5015	7849	0.618035
1.543303	0.027493	P32243	O75360	5015	5626	1.51581
1.4884	0.082397	P32243	O95467	5015	2778	1.406003
1.116321	0.454475	P32243	O00170	5015	9049	0.661847
1.196441	0.374355	P32243	Q9NSE4	5015	55699	0.822087
1.196647	0.37415	P32243	Q96T21	5015	79048	0.822497
0.831478	0.739318	P32243	O60806	5015	9095	0.092159
1.359069	0.211728	P32243	Q5JWF2	5015	2778	1.147341
1.026431	0.544365	P32243	Q92847	5015	2693	0.482067
1.476387	0.094409	P84996	Q06187	2778	695	1.381978
1.245642	0.325154	P84996	P22888	2778	3973	0.920488
1.513465	0.057331	P84996	P10828	2778	7068	1.456134
1.391804	0.178993	P84996	P10912	2778	2690	1.212811
1.386692	0.184105	P84996	Q96LT9	2778	55599	1.202587
1.236194	0.334602	P84996	P51692	2778	6777	0.901591
1.374186	0.19661	P84996	Q9NWF9	2778	54476	1.177576
1.412979	0.157817	P84996	P16473	2778	7253	1.255162
0.344423	1.226374	P84996	Q9UBR4	2778	8022	0.881951
1.479301	0.091495	P84996	P41225	2778	6658	1.387806
1.238581	0.332215	P84996	P07202	2778	7173	0.906366
1.260009	0.310788	P84996	Q08499	2778	5144	0.949221
1.204363	0.366433	P84996	P28069	2778	5449	0.83793

1.171135	0.399661	P84996	Q06710	2778	7849	0.771473
1.249051	0.321745	P84996	Q9NSE4	2778	55699	0.927306
1.320837	0.24996	P84996	Q96T21	2778	79048	1.070877
1.111115	0.459681	P84996	Q96P66	2778	83550	0.651434
1.420672	0.150124	P84996	Q5JWF2	2778	2778	1.270548
0.905209	0.665587	P84996	Q92847	2778	2693	0.239622
1.361859	0.208938	O95467	Q06187	2778	695	1.152921
1.336192	0.234604	O95467	P22888	2778	3973	1.101589
0.858138	0.712658	O95467	P10828	2778	7068	0.14548
1.482129	0.088667	O95467	P10912	2778	2690	1.393462
0.590527	0.980269	O95467	Q96LT9	2778	55599	0.389743
1.015134	0.555662	O95467	Q02643	2778	2692	0.459472
1.454064	0.116733	O95467	P51692	2778	6777	1.337331
1.342914	0.227883	O95467	Q9NWF9	2778	54476	1.115031
1.362069	0.208728	O95467	P16473	2778	7253	1.153341
1.096186	0.47461	O95467	Q969G2	2778	89884	0.621576
1.017381	0.553415	O95467	P63092	2778	2778	0.463966
1.286618	0.284178	O95467	Q9UBR4	2778	8022	1.002439
1.43207	0.138727	O95467	Q01718	2778	4158	1.293343
1.024845	0.545952	O95467	P41225	2778	6658	0.478893
1.30601	0.264786	O95467	P07202	2778	7173	1.041224
1.291273	0.279523	O95467	Q08499	2778	5144	1.01175
1.485822	0.084974	O95467	P28069	2778	5449	1.400848
1.185023	0.385773	O95467	P10644	2778	5573	0.799249
1.276541	0.294255	O95467	Q06710	2778	7849	0.982286
1.4884	0.082397	O95467	P32243	2778	5015	1.406003
1.256809	0.313987	O95467	O00170	2778	9049	0.942821
1.220246	0.350551	O95467	Q9NSE4	2778	55699	0.869695
1.208142	0.362655	O95467	Q96T21	2778	79048	0.845487
0.964666	0.60613	O95467	O60806	2778	9095	0.358537
0.333373	1.237423	O95467	Q96P66	2778	83550	0.904049
1.211925	0.358872	O95467	Q5JWF2	2778	2778	0.853053
1.190344	0.380452	O95467	Q92847	2778	2693	0.809892
1.277555	0.293242	O00170	P01241	9049	2688	0.984313
0.493149	1.077647	O00170	P10828	9049	7068	0.584497
1.531827	0.038969	O00170	P10912	9049	2690	1.492859
1.301202	0.269594	O00170	Q9UBX0	9049	8820	1.031608
0.695151	0.875646	O00170	Q02643	9049	2692	0.180495
1.44663	0.124166	O00170	P51692	9049	6777	1.322463
1.369729	0.201067	O00170	Q9NWF9	9049	54476	1.168661
1.463919	0.106877	O00170	P16473	9049	7253	1.357042

0.841582	0.729215	O00170	Q969G2	9049	89884	0.112367
0.743663	0.827133	O00170	P63092	9049	2778	0.08347
0.967121	0.603675	O00170	Q9UBR4	9049	8022	0.363446
1.133558	0.437238	O00170	Q01718	9049	4158	0.69632
0.799039	0.771757	O00170	P41225	9049	6658	0.027282
1.274641	0.296155	O00170	P07202	9049	7173	0.978486
1.486163	0.084633	O00170	Q08499	9049	5144	1.40153
1.161033	0.409763	O00170	P28069	9049	5449	0.751269
0.897746	0.673051	O00170	P10644	9049	5573	0.224695
0.969472	0.601324	O00170	Q06710	9049	7849	0.368148
1.285706	0.28509	O00170	O75360	9049	5626	1.000616
1.116321	0.454475	O00170	P32243	9049	5015	0.661847
1.256809	0.313987	O00170	O95467	9049	2778	0.942821
1.315857	0.254939	O00170	Q9NSE4	9049	55699	1.060919
1.22072	0.350077	O00170	Q96T21	9049	79048	0.870643
0.695137	0.875659	O00170	O60806	9049	9095	0.180522
1.191189	0.379607	O00170	Q5JWF2	9049	2778	0.811582
1.291872	0.278924	O00170	P01225	9049	2488	1.012948
0.902885	0.667911	O00170	Q92847	9049	2693	0.234974
1.264313	0.306483	Q9NSE4	P01241	55699	2688	0.95783
1.287082	0.283715	Q9NSE4	Q06187	55699	695	1.003367
1.295711	0.275086	Q9NSE4	P22888	55699	3973	1.020625
1.239478	0.331318	Q9NSE4	P10828	55699	7068	0.90816
1.315406	0.25539	Q9NSE4	P10912	55699	2690	1.060016
1.4731	0.097696	Q9NSE4	Q96LT9	55699	55599	1.375404
1.226141	0.344655	Q9NSE4	Q9UBX0	55699	8820	0.881485
1.268621	0.302175	Q9NSE4	Q02643	55699	2692	0.966446
1.335078	0.235718	Q9NSE4	P51692	55699	6777	1.09936
1.268226	0.30257	Q9NSE4	Q9NWF9	55699	54476	0.965657
1.298326	0.272471	Q9NSE4	P16473	55699	7253	1.025855
1.213473	0.357323	Q9NSE4	Q969G2	55699	89884	0.85615
1.409249	0.161547	Q9NSE4	P63092	55699	2778	1.247702
1.272805	0.297992	Q9NSE4	Q9UBR4	55699	8022	0.974813
1.224031	0.346765	Q9NSE4	Q01718	55699	4158	0.877265
1.299074	0.271722	Q9NSE4	P41225	55699	6658	1.027352
1.280999	0.289797	Q9NSE4	P07202	55699	7173	0.991202
1.296319	0.274477	Q9NSE4	Q08499	55699	5144	1.021842
1.214772	0.356025	Q9NSE4	P28069	55699	5449	0.858747
1.08998	0.480816	Q9NSE4	P10644	55699	5573	0.609163
1.155209	0.415587	Q9NSE4	Q06710	55699	7849	0.739622
1.226141	0.344655	Q9NSE4	O75360	55699	5626	0.881485

1.196441	0.374355	Q9NSE4	P32243	55699	5015	0.822087
1.249051	0.321745	Q9NSE4	P84996	55699	2778	0.927306
1.220246	0.350551	Q9NSE4	O95467	55699	2778	0.869695
1.315857	0.254939	Q9NSE4	O00170	55699	9049	1.060919
1.310034	0.260762	Q9NSE4	Q96T21	55699	79048	1.049272
1.356183	0.214613	Q9NSE4	O60806	55699	9095	1.141569
1.324088	0.246708	Q9NSE4	Q96P66	55699	83550	1.077381
1.328342	0.242454	Q9NSE4	Q5JWF2	55699	2778	1.085888
1.21652	0.354276	Q9NSE4	P01225	55699	2488	0.862244
1.280219	0.290577	Q9NSE4	Q92847	55699	2693	0.989642
1.196012	0.374785	Q96T21	P01241	79048	2688	0.821227
1.325282	0.245515	Q96T21	Q06187	79048	695	1.079767
1.422595	0.148202	Q96T21	P22888	79048	3973	1.274393
1.339856	0.23094	Q96T21	P10828	79048	7068	1.108916
1.318239	0.252557	Q96T21	P10912	79048	2690	1.065682
1.332388	0.238409	Q96T21	Q96LT9	79048	55599	1.093979
1.208142	0.362655	Q96T21	Q9UBX0	79048	8820	0.845487
1.277836	0.29296	Q96T21	Q02643	79048	2692	0.984876
1.287642	0.283155	Q96T21	P51692	79048	6777	1.004487
1.386591	0.184205	Q96T21	Q9NWF9	79048	54476	1.202386
1.274305	0.296492	Q96T21	P16473	79048	7253	0.977813
1.453064	0.117732	Q96T21	Q969G2	79048	89884	1.335332
1.427783	0.143014	Q96T21	P63092	79048	2778	1.284769
1.409325	0.161471	Q96T21	Q9UBR4	79048	8022	1.247853
1.23534	0.335457	Q96T21	Q01718	79048	4158	0.899883
1.232987	0.33781	Q96T21	P41225	79048	6658	0.895177
1.138106	0.43269	Q96T21	P07202	79048	7173	0.705416
1.240415	0.330382	Q96T21	Q08499	79048	5144	0.910033
1.349528	0.221268	Q96T21	P28069	79048	5449	1.128261
1.314192	0.256604	Q96T21	P10644	79048	5573	1.057588
1.195045	0.375752	Q96T21	Q06710	79048	7849	0.819293
1.164328	0.406469	Q96T21	O75360	79048	5626	0.757859
1.196647	0.37415	Q96T21	P32243	79048	5015	0.822497
1.320837	0.24996	Q96T21	P84996	79048	2778	1.070877
1.208142	0.362655	Q96T21	O95467	79048	2778	0.845487
1.22072	0.350077	Q96T21	O00170	79048	9049	0.870643
1.310034	0.260762	Q96T21	Q9NSE4	79048	55699	1.049272
1.247978	0.322818	Q96T21	O60806	79048	9095	0.92516
1.344479	0.226318	Q96T21	Q96P66	79048	83550	1.118161
1.282706	0.28809	Q96T21	Q5JWF2	79048	2778	0.994616
1.196012	0.374785	Q96T21	P01225	79048	2488	0.821227

1.468365	0.102431	Q96T21	Q92847	79048	2693	1.365934
1.040637	0.530159	O60806	P01241	9095	2688	0.510478
1.425578	0.145219	O60806	Q06187	9095	695	1.280359
1.55498	0.015816	O60806	P22888	9095	3973	1.539164
1.414154	0.156643	O60806	P10912	9095	2690	1.257511
1.061803	0.508993	O60806	Q9UBX0	9095	8820	0.55281
0.34239	1.228407	O60806	Q02643	9095	2692	0.886017
1.518076	0.05272	O60806	P51692	9095	6777	1.465356
1.442912	0.127884	O60806	Q9NWF9	9095	54476	1.315028
1.383992	0.186804	O60806	P16473	9095	7253	1.197188
0.72843	0.842366	O60806	Q969G2	9095	89884	0.113937
0.245777	1.325019	O60806	P63092	9095	2778	1.079242
0.520566	1.05023	O60806	Q9UBR4	9095	8022	0.529664
1.029536	0.54126	O60806	Q01718	9095	4158	0.488276
0.541078	1.029718	O60806	P41225	9095	6658	0.48864
1.2119	0.358897	O60806	P07202	9095	7173	0.853003
1.457692	0.113104	O60806	Q08499	9095	5144	1.344588
0.848804	0.721992	O60806	P28069	9095	5449	0.126812
0.457144	1.113652	O60806	P10644	9095	5573	0.656508
0.62742	0.943376	O60806	Q06710	9095	7849	0.315956
1.098794	0.472003	O60806	O75360	9095	5626	0.626791
0.831478	0.739318	O60806	P32243	9095	5015	0.092159
0.964666	0.60613	O60806	O95467	9095	2778	0.358537
0.695137	0.875659	O60806	O00170	9095	9049	0.180522
1.356183	0.214613	O60806	Q9NSE4	9095	55699	1.141569
1.247978	0.322818	O60806	Q96T21	9095	79048	0.92516
1.354808	0.215989	O60806	Q5JWF2	9095	2778	1.138819
1.074137	0.496659	O60806	P01225	9095	2488	0.577478
0.443621	1.127175	O60806	Q92847	9095	2693	0.683554
0.262568	1.308228	Q96P66	P01241	83550	2688	1.045661
1.524339	0.046458	Q96P66	Q06187	83550	695	1.477881
1.427758	0.143039	Q96P66	P22888	83550	3973	1.284719
1.449864	0.120933	Q96P66	P10912	83550	2690	1.328931
0.20086	1.369936	Q96P66	Q9UBX0	83550	8820	1.169076
1.427745	0.143052	Q96P66	P51692	83550	6777	1.284693
1.362986	0.20781	Q96P66	Q9NWF9	83550	54476	1.155176
1.315581	0.255216	Q96P66	P16473	83550	7253	1.060365
0.018742	1.552055	Q96P66	Q01718	83550	4158	1.533313
1.298415	0.272381	Q96P66	P07202	83550	7173	1.026033
1.345676	0.22512	Q96P66	Q08499	83550	5144	1.120556
0.17642	1.394376	Q96P66	O75360	83550	5626	1.217957

1.111115	0.459681	Q96P66	P84996	83550	2778	0.651434
0.333373	1.237423	Q96P66	O95467	83550	2778	0.904049
1.324088	0.246708	Q96P66	Q9NSE4	83550	55699	1.077381
1.344479	0.226318	Q96P66	Q96T21	83550	79048	1.118161
1.399912	0.170885	Q96P66	Q5JWF2	83550	2778	1.229027
0.230656	1.34014	Q96P66	P01225	83550	2488	1.109484
1.267266	0.303531	Q5JWF2	P01241	2778	2688	0.963735
1.272306	0.29849	Q5JWF2	Q06187	2778	695	0.973815
1.340824	0.229973	Q5JWF2	P22888	2778	3973	1.110851
1.32569	0.245106	Q5JWF2	P10828	2778	7068	1.080584
1.211346	0.359451	Q5JWF2	P10912	2778	2690	0.851895
1.45071	0.120086	Q5JWF2	Q96LT9	2778	55599	1.330624
1.236102	0.334694	Q5JWF2	Q9UBX0	2778	8820	0.901408
1.416236	0.15456	Q5JWF2	Q02643	2778	2692	1.261676
1.370419	0.200378	Q5JWF2	P51692	2778	6777	1.170041
1.322354	0.248443	Q5JWF2	Q9NWF9	2778	54476	1.073911
1.330701	0.240096	Q5JWF2	P16473	2778	7253	1.090605
1.29766	0.273136	Q5JWF2	Q969G2	2778	89884	1.024525
1.309296	0.2615	Q5JWF2	P63092	2778	2778	1.047797
1.245408	0.325388	Q5JWF2	Q9UBR4	2778	8022	0.92002
1.229742	0.341054	Q5JWF2	Q01718	2778	4158	0.888688
1.302927	0.267869	Q5JWF2	P41225	2778	6658	1.035058
1.224617	0.346179	Q5JWF2	P07202	2778	7173	0.878438
1.307771	0.263025	Q5JWF2	Q08499	2778	5144	1.044746
1.215962	0.354835	Q5JWF2	P28069	2778	5449	0.861127
1.181285	0.389511	Q5JWF2	P10644	2778	5573	0.791774
1.294907	0.27589	Q5JWF2	Q06710	2778	7849	1.019017
1.298541	0.272255	Q5JWF2	O75360	2778	5626	1.026286
1.359069	0.211728	Q5JWF2	P32243	2778	5015	1.147341
1.420672	0.150124	Q5JWF2	P84996	2778	2778	1.270548
1.211925	0.358872	Q5JWF2	O95467	2778	2778	0.853053
1.191189	0.379607	Q5JWF2	O00170	2778	9049	0.811582
1.328342	0.242454	Q5JWF2	Q9NSE4	2778	55699	1.085888
1.282706	0.28809	Q5JWF2	Q96T21	2778	79048	0.994616
1.354808	0.215989	Q5JWF2	O60806	2778	9095	1.138819
1.399912	0.170885	Q5JWF2	Q96P66	2778	83550	1.229027
1.236102	0.334694	Q5JWF2	P01225	2778	2488	0.901408
1.192786	0.37801	Q5JWF2	Q92847	2778	2693	0.814776
1.41773	0.153066	P01225	Q06187	2488	695	1.264664
1.34683	0.223966	P01225	P22888	2488	3973	1.122864
0.980467	0.590329	P01225	P10828	2488	7068	0.390138

1.399484	0.171312	P01225	P10912	2488	2690	1.228172
0.270143	1.300653	P01225	Q96LT9	2488	55599	1.03051
1.114238	0.456558	P01225	Q02643	2488	2692	0.657681
1.407656	0.16314	P01225	P51692	2488	6777	1.244516
1.288588	0.282209	P01225	Q9NWF9	2488	54476	1.006379
1.433063	0.137734	P01225	P16473	2488	7253	1.295329
1.146281	0.424516	P01225	Q969G2	2488	89884	0.721765
1.063493	0.507303	P01225	P63092	2488	2778	0.55619
1.320472	0.250324	P01225	Q9UBR4	2488	8022	1.070149
1.524662	0.046135	P01225	Q01718	2488	4158	1.478527
1.160764	0.410032	P01225	P41225	2488	6658	0.750732
1.332645	0.238151	P01225	P07202	2488	7173	1.094494
1.299307	0.271489	P01225	Q08499	2488	5144	1.027818
1.514932	0.055864	P01225	P28069	2488	5449	1.459068
1.249079	0.321718	P01225	P10644	2488	5573	0.927361
1.351299	0.219497	P01225	Q06710	2488	7849	1.131802
1.291872	0.278924	P01225	O00170	2488	9049	1.012948
1.21652	0.354276	P01225	Q9NSE4	2488	55699	0.862244
1.196012	0.374785	P01225	Q96T21	2488	79048	0.821227
1.074137	0.496659	P01225	O60806	2488	9095	0.577478
0.230656	1.34014	P01225	Q96P66	2488	83550	1.109484
1.236102	0.334694	P01225	Q5JWF2	2488	2778	0.901408
1.231388	0.339408	P01225	Q92847	2488	2693	0.891981
1.184614	0.386182	Q92847	P01241	2693	2688	0.798433
1.405704	0.165092	Q92847	Q06187	2693	695	1.240612
1.40101	0.169786	Q92847	P22888	2693	3973	1.231224
0.325755	1.245042	Q92847	P10828	2693	7068	0.919287
1.429716	0.141081	Q92847	P10912	2693	2690	1.288635
1.241191	0.329606	Q92847	Q9UBX0	2693	8820	0.911585
0.619764	0.951032	Q92847	Q02643	2693	2692	0.331268
1.264745	0.306052	Q92847	P51692	2693	6777	0.958693
1.29724	0.273556	Q92847	Q9NWF9	2693	54476	1.023684
1.483427	0.08737	Q92847	P16473	2693	7253	1.396057
0.778954	0.791843	Q92847	Q969G2	2693	89884	0.012889
0.78674	0.784057	Q92847	P63092	2693	2778	0.002683
0.823594	0.747202	Q92847	Q9UBR4	2693	8022	0.076391
1.079356	0.49144	Q92847	Q01718	2693	4158	0.587916
0.617378	0.953418	Q92847	P41225	2693	6658	0.336041
1.295971	0.274825	Q92847	P07202	2693	7173	1.021146
1.321346	0.24945	Q92847	Q08499	2693	5144	1.071896
1.066575	0.504222	Q92847	P28069	2693	5449	0.562353

0.884027	0.686769	Q92847	P10644	2693	5573	0.197259
0.556829	1.013968	Q92847	Q06710	2693	7849	0.457139
1.172249	0.398547	Q92847	O75360	2693	5626	0.773702
1.026431	0.544365	Q92847	P32243	2693	5015	0.482067
0.905209	0.665587	Q92847	P84996	2693	2778	0.239622
1.190344	0.380452	Q92847	O95467	2693	2778	0.809892
0.902885	0.667911	Q92847	O00170	2693	9049	0.234974
1.280219	0.290577	Q92847	Q9NSE4	2693	55699	0.989642
1.468365	0.102431	Q92847	Q96T21	2693	79048	1.365934
0.443621	1.127175	Q92847	O60806	2693	9095	0.683554
1.192786	0.37801	Q92847	Q5JWF2	2693	2778	0.814776
1.231388	0.339408	Q92847	P01225	2693	2488	0.891981