CHAPTER IV

DETERMINATION OF IMMUNOLOGICAL PROPERTIES AMONG HUMAN NAÏVE B CELL SUBSETS

4.1 QUESTION

4.1.1 Were genes among naïve B cell subsets differentially expressed?

4.1.2 Could their differential gene expressions imply their differences in immunological properties?

4.2 HYPOTHESIS

Expression profile of each naïve B cell subset was unique and could imply its unique immunoproperty.

4.3 OBJECTIVES

4.3.1 To determine differences in expression profile among B cell subsets

4.3.2 To acquire informative data for implying the cell's possible immunoproperty

4.4 MATERIALS AND METHODS

4.4.1 B CELL EXPRESSION DATA

Three datasets available in Gene Expression Onimbus (GEO) from Abbas et al (GSE22886, n=11) (Abbas et al., 2005), Longo et al (GSE12845, n=6) (Longo et al., 2009), Good et al (GSE13411, n=4) (Good et al., 2009) were retrieved and applied for analysis in this study. Gene expression values of human B cell populations/subsets from Affymetrix Human Genome U133A Array (Affymetrix, Santa Clara, CA) were selected and retrieved to acquire 21 total array data samples. These arrays contained with Peripheral naïve B cells (n=10), Splenic naïve B cells (n=2), Tonsilar naïve B cells (n=3), Peripheral memory B cells (Per Bmem) (n=4) and Splenic memory B cells (Splenic Bmem) (n=2). According to each dataset, phenotypes of B cell population/subset were as follow: Peripheral naïve B cells were generally classified as $CD19^{+}CD27^{-}$ cells with

additional IgA-/IgG-(Abbas et al., 2005) or IgD+ (Longo et al., 2009) phenotype. Splenic naïve B cells were also $CD19^{+}CD27^{-}$cells with additional IgA-/IgG-phenotype (Good et al., 2009), while tonsilar naïve B cells were $CD19^{+}CD38^{-}IgD^{+}$cells (Longo et al., 2009). Common peripheral blood (Abbas et al., 2005) and splenic memory (Good et al., 2009) B cells were regarded as $CD19^{+}CD27^{+}IgM^{-}IgG/IgA^{+}$cells. Since this study confined memory B cells as common class-switched memory B cells, IgM^{+}memory B cells ($CD19^{+}CD27^{+}IgM^{+}IgG/A^{-}$cells) and tonsilar post germinal center B cells were thus not included.

4.4.2 AFFYMETRIX GENE CHIP COMPARISON

To reduce non-biological variation among microarray studies (batch effects), a normalizing algorithm, ComBat (Johnson et al., 2007) was applied prior to performing subsequent comparative analysis. A filter was then applied to the resulting data, in order to exclude the least variable genes. The final dataset consisted of 19,299 genes. Non-parametric multiple comparison test (Kruskal-Walis) was performed to acquire differentially expressed genes among all B cell classes used in this study. The False Discovery Rate (FDR) threshold for the test was set to 0.05. LPE algorithm followed by Benjamini-Hochberg correction (Jain et al., 2005), were used to detect the most significantly differentially expressed genes between couples of B cell classes. The FDR threshold for the test was set to 10^{-5}. A gene was considered to be differentially expressed in a comparison if it was declared significant by both the algorithms used and, at the same time, its fold-change was equal or greater than 2. Multiple experiment viewer (MeV) software and R programming language were used for the mentioned analyses, with the help of existing packages for R program ("LPEadj") available on the Bioconductor website (http://www.bioconductor.org). Hierarchical clustering of genes was performed, based on the Pearson's centered correlation coefficient. In order to illustrate gene signatures discriminating different cell types, results were visualized and exploited using MeV (Saeed et al., 2003), Cluster 3.0 software Java Treview (de Hoon et al., 2004) softwares.

4.4.3 GENE CATEGORIZATION AND GENE-ANNOTATION ENRICHMENT ANALYSIS

Acquired differentially expressed gene lists of interest were further categorized according to known B cells' characteristics. Gene categories were mainly based on common B cell phenotypes, surface/intracellular molecules and Gene Ontology annotation (GO) (http://amigo.geneontology.org/cgi-bin/amigo/search.cgi.) (Ashburner et al., 2000; Bohnhorst et al., 2001; Good et al., 2009; Tangye and Good, 2007; Vugmeyster et al., 2004). David Functional Annotation Bioinformatics Microarray Analysis (Huang da et al., 2009a, b) web-service (http://david.abcc.ncifcrf.gov) was then used to make a functional enrichment analysis, in order to detect the most significant GO terms associated to each gene list, according to a Fisher's exact statistical test. All gene categories used in this study are provided in Sup Table 1.

4.5 EXPERIMENTAL DESIGNS

4.5.1 EXPERIMENT 1 EXPRESSION COMPARISON AMONG HUMAN NAÏVE B CELL SUBSETS

Comparisons among naïve B cell subsets were performed as following: (1) Splenic versus Tonsilar, (2) Peripheral versus Splenic and (3) Peripheral versus Tonsilar naïve B cell subsets. The acquired gene lists were then categorized/analyzed by known B cell's characteristics or term enrichment as previously described.

4.5.2 EXPERIMENT 2 EXPRESSION COMPARISON BETWEEN HUMAN NAÏVE AND MEMORY B CELLS

Since this study first aimed to describe general differences between human naïve and memory B cells by the proposed approach, the cells were grouped as total naïve B cells and memory B cells regardless of their source (peripheral blood, spleen and tonsil). However, the study majorly considered the comparison without inclusion of Tonsilar naïve B cells due to the lack of tonsilar memory B cells as their comparable counterparts. Similar to comparisons among naïve B cell subsets, the acquired gene lists were then categorized and analyzed by term enrichment as previously described.

4.6 RESULTS

4.6.1 PERIPHERAL NAÏVE B CELLS WERE CLUSTERED SEPARATELY FROM OTHER NAÏVE B CELL SUBSETS BASED ON OVERALL DIFFERENTIALLY EXPRESSED GENES.

Sample clustering using total platform's genes could not classify B cell samples into right groups, implying very close similarities among all B cell subsets (Figure 18). However, naïve and memory B cells could be clustered correctly based on genes responsible for their common phenotypes (CD27, CD80, CD86, IGH@, IGHA, IGHD, IGHG, IGHM, IGJ, IL4R and IL21R) (Figure 15A). To determine variation in similarities among naïve B cell subsets, all B cell samples were clustered based on total differentially expressed probes (Kruskal-Walis, FDR<0.05) (Figure 15B). Splenic and tonsilar naïve B cells illustrated strong correlation and were able to be clustered together as lymphoid naïve B cells according to their lymphoid residences. Lymphoid naïve B cells were also more correlated with memory B cells when compared with peripheral naïve B cells. The results revealed obvious exclusive clustering of peripheral naïve B cells from other naïve B cell subsets.

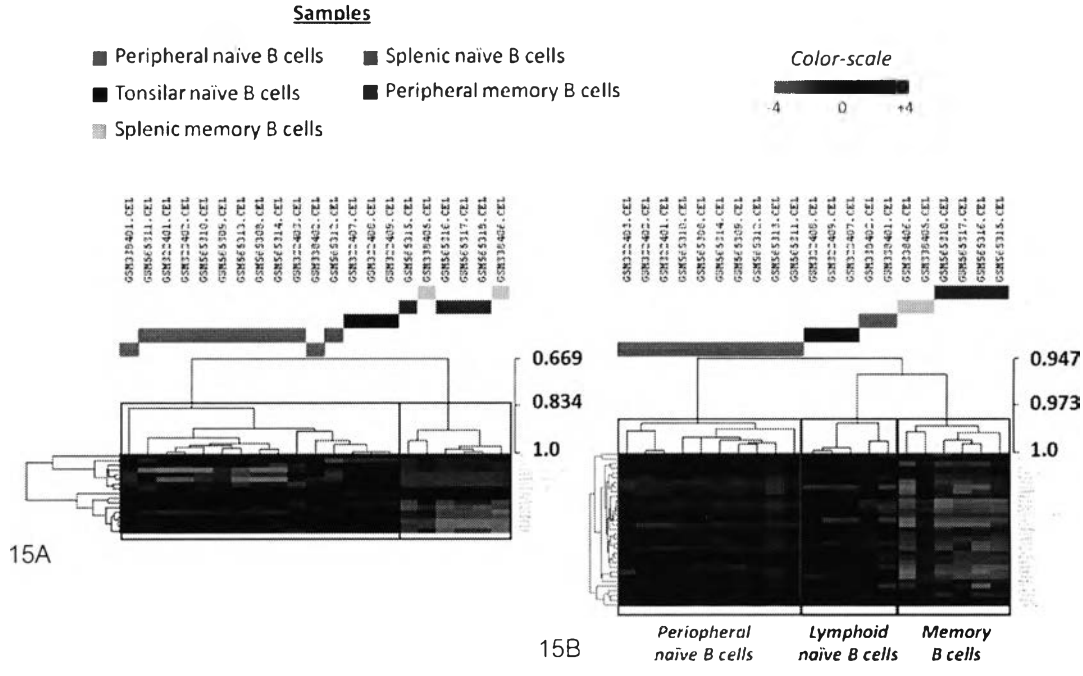

Figure 15. Hierarchical clustering (HCL) of B cell samples: (A) Hierarchical clustering based on genes responsible for common naïve/memory B cell phenotypes and (B) differentially expressed genes (60 genes were shown here) among B cell populations was performed. Exclusive clustering of Peripheral naïve B cells from other Lymphoid naïve B cells (Splenic and Tonsilar naïve B cells) was presented. Major B cell clusters: Lymphoid naïve B cells, Memory B cells, Peripheral naïve B cells, Total niave B cells were defined in empty squares.

4.6.2 EXPRESSION PROFILE OF PERIPHERAL NAÏVE B CELL SUBSET WAS DIFFERENT FROM THOSE OF LYMPHOID NAÏVE B CELL SUBSETS

Expression comparisons among naïve B cell subsets (Peripheral, Splenic and Tonsilar subsets) were performed according to experimental design 1 (previously described). Three pairs of comparisons (LPE and BH correction, FDR<10^{-5}) were as following: "Splenic VS Tonsilar naïve B cells", "Peripheral VS Splenic naïve B cells" and "Peripheral VS Tonsilar naïve B cells". The number of differentially expressed probes of each pair was 12, 31 and 235 corresponding to 10, 29 and 202 genes, respectively (Supplement Table 1-3). Several differentially expressed genes were related with "B cell phenotypes", "B cell stimulation", "B cell apoptosis" and "Cell-cycle" characteristics

(Figure 16 and Table 4). Subsequent enrichment analysis of Gene Ontology annotation (GO) revealed several terms associated with lymphocyte activation, regulation of cell apoptosis and regulation of cell cycle. However, none of them was specific to B cell at $p<0.005$ and fold-enrichment> 5.

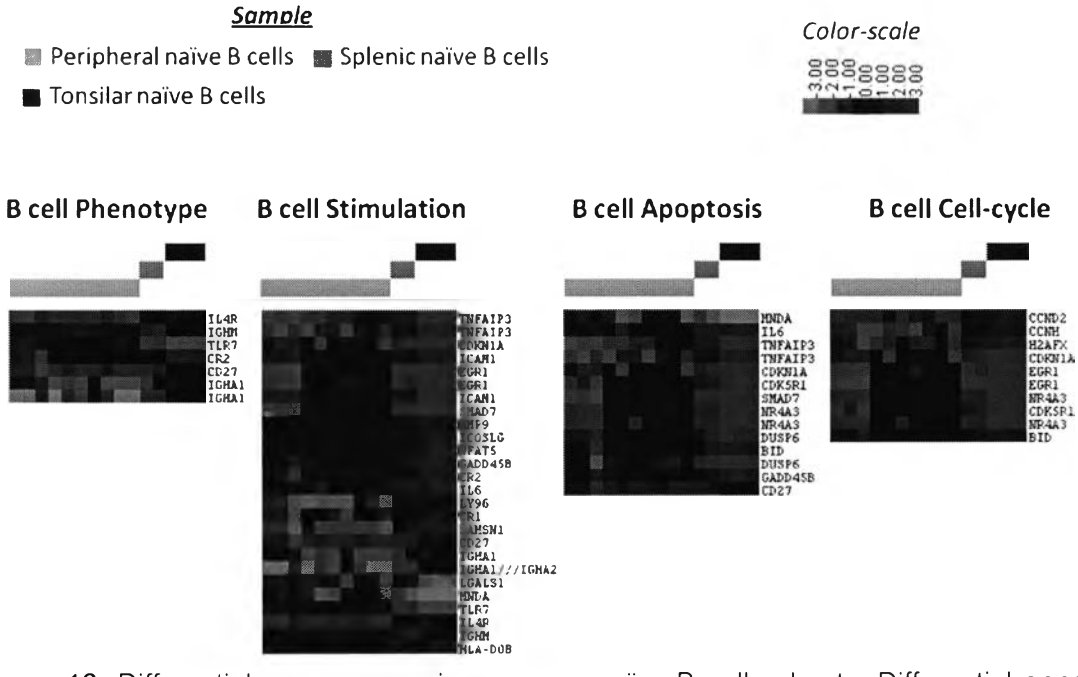

Figure 16. Differential gene expressions among naïve B cell subsets: Differential gene expressions associated with common B cell phenotype, B cell stimulation, B cell apoptosis and B cell-cycle were merged to visualize and determine among naïve B cell subsets used in this study. The dendrogram color changes within a row indicated expression levels relative to the average (median) of the sample population. The red and green colors indicated positive and negative value, respectively (Java TreeView). The False Discovery Rate (FDR) threshold was set to 10^{-5}.

Table 4. Categorization of differential gene expression among naïve B cell subsets

Genes associated with	Peripheral VS Splenic naive B cells		Peripheral VS Tonsilar naïve B cells		Splenic VS Tonsilar naïve B cells	
	Peripehral >Splenic	Peripheral <Spelnic	Peripheral >Tonsilar	Peripheral <Tonsilar	Splenic >Tonsilar	Splenic <Tonsilar
B cell Phenotype	IGHM, IL4R, TLR7	CD27, IGHA1, IGHA2	IGHM, IL4R, TLR7	CR2, IGHA1, IGHA2		
B cell Stimulation	IGHM, IL4R, TLR7	CD27, IGHA1, IGHA2, MD2	HLA-DOB, IL4R, LGALS1, MNDA, TLR7	CDKN1A, CR1, CR2, EGR1, GADD45B, ICAM1, ICOSLG, IL6, MD2, MMP9, NFAT5, SAMSN1, SMAD7, TNFAIP3, IGHA1, IGHA2	MNDA	
B cell Apoptosis		CD27, DUSP6, SMAD7	MNDA	BID, CDK5R1, CDKN1A,, DUSP6, IL6, IL6ST, NR4A3, SMAD7, TNFAIP3	MNDA	NR4A3, SMAD7
B cell cycle		EGR1, NR4A3		BID, CCND2, CCNH, CDK5R1, CDKN1A, EGR1, H2AFX, NR4A3		NR4A3

4.6.3 THE ANALYSIS VALIDATION WAS CONFIRMED BY DIFFERENTIAL GENE EXPRESSION BETWEEN NAÏVE AND MEMORY B CELLS WITH THEIR WELL-ESTABLISHED PHENOTYPES AND IMMUNOPROPERTIES.

Gene expression comparison between naïve and memory B cells was performed according to experimental design 2 described in methodology. The total numbers of differentially expressed genes were 136 corresponding to 104 genes (LPE and BH correction, FDR<10^{-5}) (Table 11). Several well-established differences in B cell phenotypes, B cell stimulation and B cell apoptosis were reproduced (Bohnhorst et al., 2001; Good et al., 2009; Meyaard, 2008; Tangye and Good, 2007; Vugmeyster et al., 2004) (Figure 17 and Table 5). Term enrichment analysis showed several annotations associated with lymphocyte activation, regulation of cell apoptosis and proliferation. "Regulation of B cell activation" annotation was produced regarded as the most significant cell characteristic difference between naïve and memory B cells (Table 6).

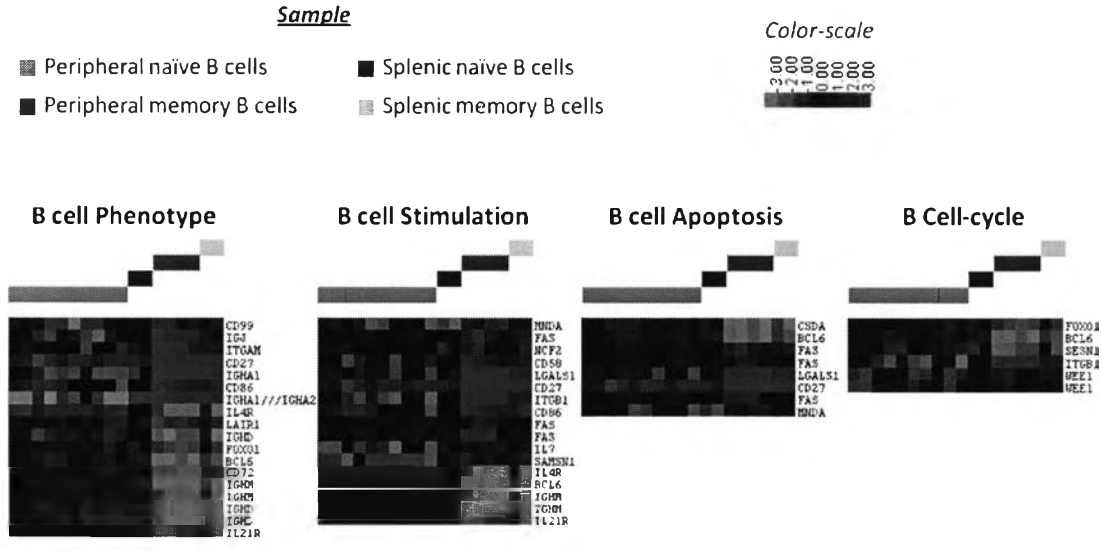

Figure 17. Differential gene expression between naïve and memory B cells: Differential gene expressions associated with common B cell phenotype, B cell stimulation, B cell apoptosis and B cell-cycle were merged to visualize and determine between naïve and memory B cell populations used in this study. The dendrogram color changes within a row indicated expression levels relative to the average (median) of the sample population. The red and green colors indicated positive and negative value, respectively (Java TreeView). The False Discovery Rate (FDR) threshold was set to 10^{-5}.

Table 5. Categories of differential gene expression between naïve and memory B cells

Categories	*Naïve B cell > Memory B cell*	*Naïve B cell < Memory B cell*
B cell Phenotypes	BCL6, CD72, FOXO1, IGHD, IGHM, IL4R, IL21R, LAIR1	CD27, CD86, CD99, IGHA1, IGHA2, IGJ, ITGAM
B cell Stimulation	BCL6, IGHM, IL4R, IL21R	CD27, CD58, CD86, FAS, IL7, ITGB1, LGALS1, MNDA, SAMSN1, NCF2
B cell apoptosis	BCL6, CSDA	CD27, FAS, LGALS1, MNDA
B cell cycle	BCL6, FOXO1, SESN1	HSPA8, ITGB1, WEE1

Table 6. GO terms associated with differences in gene expressions between naïve and memory B cells

Term	P-values	Fold Enrichment	Associated Genes Expression	
			Naïve>Memory B cells	Naïve<Memory B cells
GO:0050864~regulation of B cell activation	3.52E-03	12.939	BCL6	CD27, FAS, IL7

4.7 DISCUSSIONS

Expression profile of Peripheral naïve B cell subset revealed the cells' uniqueness from Splenic and Tonsilar naïve B cell subsets (Lymphoid naïve B cell subsets) which were very similar to each other (Figure 15B and Figure 16). Different characteristics between lymphoid and peripheral microenvironments were regarded as major contributors to this. Of several differences, B cell Antigen (Ag) recognition and subsequent Ag presentation to T cell are common in lymphoid organs but absent from peripheral blood (Pillai and Cariappa, 2009; Thomas et al., 2006). In agreement with this, expression profiles of Lymphoid naïve B cells illustrated their previous stimulation by Ag recognition and CD40 when compared with Peripheral naïve B cells (Table 7). The methodology was validated by differential gene expression analysis between naïve B cell and memory B cell, of which several common cell characteristics were successfully reproduced.

4.7.1 DIFFERENTIAL GENE EXPRESSION AMONG NAIVE B CELL SUBSETS

According to clustering result, Splenic and Tonsilar naïve B cells were shown closely related with each other and could be classified as Lymphoid naïve B cells (both spleen and tonsil are lymphoid organs). On the other hand, Peripheral naïve B cells were uniquely clustered from other naïve B cell subsets (Figure 15B). In details, varied degrees of differences between Peripheral naïve B cell and each Lymphoid naive B cell subset were additionally implied. Since numbers of differentially expressed genes produced in "Peripheral VS Splenic naïve B cell" comparison was higher than

"Peripheral VS Splenic naïve B cell" comparison (Figure 16, Table 4, Table 8-10), the data implied stronger similarity between Peripheral and Splenic naïve B cells.

Several genes can contribute their roles in various B cell mechanisms, especially those associated with common B cell phenotype (Table 4). IL4R expression is vital for naïve B cell survival, proliferation and differentiation via interleukin 4 (IL-4) signaling (Banchereau et al., 1994; Wagner et al., 2000), while TLR7 gene encodes for Toll-like receptor 7, an important pathogen recognition receptors (PRRs) of B cell (Hanten et al., 2008). Since both IL4R and TLR7 were higher expressed in Peripheral when compared with Lymphoid naïve B cells, their different sensitivities to IL-4 and TLR7 ligand were also suggested (Figure 16 and Table 4). CR2 gene encodes CD21, a common B cell complement receptor (Boackle et al., 1998). Tonsilar naïve B cells expressed higher CR2 than Peripheral naïve B cells which might result in enhanced ability to capture the immune complexes. Since IL-4 can downregulate CR2 expression of naïve B cells (Takahashi et al., 1997), inverse correlation between CR2 and IL4R expressions in Tonsilar naïve B cell was partially explainable. Normally, IgA and CD27 upregulations are initiated by B cell Ag recognition allowed only in lymphoid but not peripheral microenvironments (Jacquot et al., 1997; Kobata et al., 1995; Xiao et al., 2004). Higher IGA and CD27 expressions in Lymphoid when compared with Peripheral naïve B cell subsets were thus expectable, and also implied possible difference in activation state between the cell subsets.

Difference in B cell activation, apoptosis regulation and cell-cycle regulation between Lymphoid and Peripheral naïve B cell subsets were significantly illustrated by their differential gene expressions (Figure 16 and Table 4). Since changes in several gene expressions are evidenced after B cell stimulation, we categorized differential gene expressions according to them. Interestingly, several changes in gene expressions indicated that Lymphoid naïve B cells (especially, Tonsilar naïve B cells) acquire more stimuli than Peripheral naïve B cells (Table 7). The categorization however omitted discussion about IL4R and LGALS1. These were due to sophisticated control of

IL4R (Zuber et al., 1990) and increasing LGALS1 expression which could both indicate B cell activating (Zuniga et al., 2001) and anergic states (Clark et al., 2007).

Table 7. Changes in gene expressions which indicated higher stimulating state of Lymphoid than Peripheral naïve B cells

Genes	Encoded molecules	Function	Up/Downregulated upon stimulation	Stimuli	References
CD27	CD27	B cell costimulatory molecule associated with differentiation, proliferation and apoptosis	Upregulated	CD40L+Ag	1
CR2	Complement receptor 2	Immune complex recognition	Upregulated	Ag	2
EGR1	Early growth response protein 1	Cell-cycle progression, and downregulation of Fas and CD23 expression	Upregulated	Ag	3
GADD45B		Protect Fas-induced apoptosis	Upregulated	CD40L	4
HLA-DOB	Human Histocompatibility Leukocyte Antigen (HLA)-DOB	Inhibit peptide loading on HLA-DM	Downregulated	CD40L	5
ICAM1	Intercellular Adhesion molecule-1 or CD54	Intercellular adhesion/costimulation of B cell during Ag presentation to helper T cell (Th)	Upregulated	CD40L	6
ICOSLG	ICOS ligand	Help with follicular helper T cell (Tfh cell) differentiation	Upregulated	CD40L	7
IGHA	Immunoglobulin heavy constant alpha chain	Major component of IgA	Upregulated	Ag	8
IL6	Interleukin 6 (IL-6)	Important proinflammatory cytokine	Upregulated	Ag, Bacteria	9
MMP9	Matrix metallopeptidase 9	Degrade basement membrane and cellular matrix during B cell migration	Upregulated	TNFα	10

SAMSN1	SAM domain, SH3 domain and nuclear localization signals 1	Negative regulator of B cell activation and differentiation	Upregulated	IL-4, CD40L, Ag	11
SMAD7	SMAD protein 7	Protect cell from TGFβ-induced growth inhibition and apoptosis	Upregulated	TGFβ, CD40L	12
TNFAIP3	Tumor necrosis factor alpha-induced protein 3	Negative regulator of NFkB involving with several B cell mechanisms	Upregulated	CD40L	13

References : 1- (Agematsu et al., 2000; Akiba et al., 1998; Hase et al., 2002; Nagumo et al., 2002); 2 - (Boackle et al., 1998; Stashenko et al., 1981; Takahashi et al., 1997) ; 3 - (Dinkel et al., 1997; Seyfert et al., 1990) ; 4 - (Zazzeroni et al., 2003); 5 - (Chen et al., 2002; Denzin et al., 2005); 6 - (Lee et al., 1999; Reichardt et al., 2007a) ; 7- (Hu et al., ; Liang et al., 2002; Nurieva et al., 2008; Reichardt et al., 2007a) ; 8 - (Kinoshita et al., 2001); 9 - (Vidakovics et al., ; Yin, 1990); 10 - (Melamed et al., 2006); 11 - (Zhu et al., 2004) ; 12- (Ishisaki et al., 1998; Patil et al., 2000) ; 13 - (Chu et al., ; Sarma et al., 1995)

Several differentially expressed genes also indicated unequivalent apoptosis and cell cycle regulation between Lymphoid naïve B cells (especially Tonsilar naïve B cells) and Peripheral naïve B cells (Table 4). Upregulation of several cyclin (including CCND2 and CCNH) (Eki et al., 1998; Schneider et al., 1998) and cyclin dependent kinase (CDKN1A and CDK5R1) (Floyd et al., 2001; Harper et al., 1993; Lazarus et al., 1993; Tsai et al., 1994) are important during cell-cycle progression and apoptosis control after the cells are stimulated, which were presented in Tonsilar naïve B cells. Several other genes higher expressed in Lymphoid naïve B cells (especially of Tonsilar subset) when compared with Peripheral naïve B cells were evidenced to control DNA replication (BID, GADD45B, H2AFX) (Borchert et al., ; Jin et al., 2000; Klein and Dalla-Favera, 2008; Wang et al., 1996; Zhan et al., 1999; Zhu et al., 2009; Zinkel et al., 2006). During B cell mediated immune response, the cell proliferation and apoptosis regulation are common events. In this study, Lymphoid naïve B cells were implied more active in these processes than Peripheral naïve B cells. The acquired data was thus correlated with enhanced stimulating states of Lymphoid naïve B cells (Table 7). Further clarification of this notice is needed, since knowledge about most genes' regulations in B cell are still lacking.

Since tonsil and spleen are both major common human lymphoid organs, strong similarities in their microenvironments are expectable. It is well-established that lymphoid microenvironment can provide several factors for B cell's activation and differentiation which are absent from peripheral blood (Pillai and Cariappa, 2009; Thomas et al., 2006). In agreement with this, expression profiles of Splenic and Tonsilar naïve B cells were very similar to each other, and implied their enhanced stimulating states (Table 7). In addition, unequivalent differences between Peripheral and each Lymphoid naïve B cell subsets were also implied by number of differentially expressed genes produced. Peripheral naïve B cells were shown lesser different from Splenic than Tonsilar naïve B cells (Figure 16, Table 4 and Table 8 and 9). Regarded as the major maturation site of naïve B cell, a mouse/human spleen majorly supplies naïve B cells recirculating in peripheral blood (Flaishon et al., 2000; Palanichamy et al., 2009; Tangye and Good, 2007; Young et al., 1997). Their immensely shared population should be a primary contributor to their small differences in gene expressions. In contrast, a tonsil is not a common site for human naïve B cell maturation (Palanichamy et al., 2009) limiting the cells' recirculation between tonsilar and peripheral blood compartment. Limited share in population between Peripheral and Tonsilar naïve B cell pools was thus a major contributor to the large differences in their expression profiles.

4.7.2 DIFFERENTIAL GENE EXPRESSION BETWEEN NAÏVE AND MEMORY B CELLS

Since this study aimed to predict for candidate characteristics varied among naïve B cell subsets, the reliability of the method to provide biologically informative data is thus very important. To validate the reliability of the above described results, we have utilized the same methods to perform comparative analyses between naïve B cells and memory B cells. Our findings are agreeable with those previous reports regarding to well-established characteristics of naïve and memory B cells (Good et al., 2009; Juszczynski et al., 2009; Klein et al., 2003) (Figure 3 and Table 4-5).

Immunoglobulin class switching and CD27 expression are universal markers to discriminate naïve B cell ($IgM^{+}/IgD^{hi}/IgG^{-}/IgA^{-}/CD27^{-}$) from memory B cell ($IgM^{-}/IgD^{-}/IgG^{hi}$

or $IgA^{hi}/CD27^{+}$) (Abbas et al., 2005; Agematsu et al., 1997; Crotty et al., 2004; Good et al., 2009; Klein et al., 1998; Tangye and Good, 2007; Tangye and Hodgkin, 2004; Yefenof et al., 1985). In agreement with each cell's phenotypes, naïve B cell revealed $IGHM^{hi}/IGHD^{hi}/IgA^{lo}/CD27^{lo}$ expressions, while memory B cells revealed $IGHM^{lo}/IGHD^{lo}/IgA^{hi}/CD27^{hi}$ expressions (Figure 17 and Table 5). Several other common characteristics of naïve and memory B cells were also reproducible by the comparative analysis. As expected, naïve B cells prominently expressed CD72 (Yamazaki et al., 2005), FOXO1 (Yusuf et al., 2008; Yusuf et al., 2004), IL4R (Banchereau et al., 1994; Wagner et al., 2000) and LAIR1 (van der Vuurst de Vries et al., 1999), while memory B cells expressed more CD86 (Good et al., 2009; Liu et al., 1995), CD99 (Park et al., 1999), FAS (Hao et al., 2008; Martinez-Valdez et al., 1996; Miyawaki et al., 1992; Sato et al., 2004), ITGAM (Kawai et al., 2005) and RUNX3 (Kuo et al., 2007) (Figure 17 and Table 5). Strong BCL6 repression during memory B cell differentiation was evidenced (Kuo et al., 2007), and might imply its lower expression when compared with naïve B cells.

Several characteristics of memory B cells which are unique from those of naïve B cells are majorly contributed to their activation, antigen presentation and apoptosis regulation (Good et al., 2009; Tangye et al., 2003; Tangye and Good, 2007). Supporting the knowledge, these unique characteristics were also implied by their differentially expressed genes produced (Table 5), especially those associated with B cell activation (Table 6). Taking together, differential gene expression analysis between naïve and memory B cell was shown to provide us reasonable biological information, and thus validated its implementation to the previous differential gene expression analyzes among naïve B cell subsets.

There are however some limitations of this study to be taken into the consideration: the limited gene expression data (especially those of splenic naïve B cells) and the stringent False Discovery Rate (FDR) threshold set ($<10^{-5}$) to effectively confirm the produced gene list but also exclude of several expectable differentially expressed genes.

According to gene expression meta-analysis performed in this study, Peripheral naïve B cells were considered unique from other Lymphoid naïve B subsets (Splenic and Tonsilar naive B cells). More significant differences were however found between Peripheral and Tonsilar naive B cells. Differential gene expression analysis between Peripheral and Lymphoid naïve B cells supported the idea that Lymphoid naïve B cells were more activated than Peripheral ones possibly due to several stimuli which are absent in peripheral blood. Further investigation at the protein and function levels of the acquired candidate genes (Table 7) should be warranted. In conclusion, the current study implied us possible different biological activities between Peripheral and Lymphoid naïve B cell subsets raising us awareness to generalize some knowledge among them.

4.8 SUPPLEMENTARY FIGURES

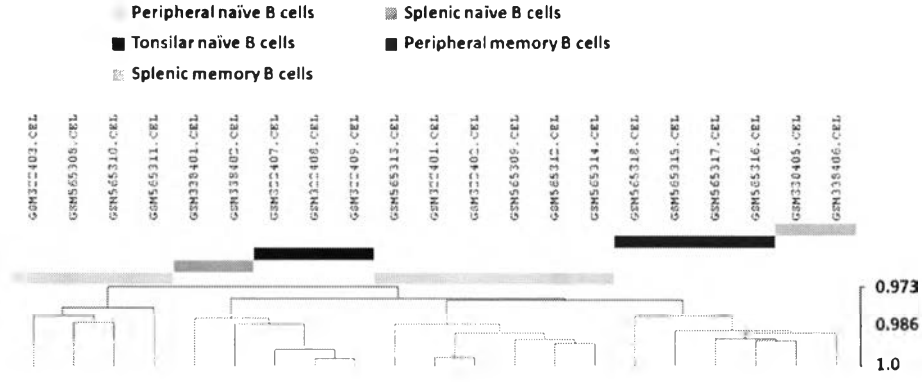

Figure 18. Hierarchical clustering of B cell samples based on overall platform probes/genes

4.8 SUPPLEMENTARY TABLES

Table 8. Differentially expressed probes/genes between peripheral and splenic naive B cells

ProbeID	GENE SYMBOL	Peripheral naïve B cells										Splenic naïve B cells	
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM338401	GSM338402
203233_at	IL4R	12.4402	12.4045	11.1389	11.6992	11.6449	11.6699	11.811	11.3298	12.0618	12.4041	9.8183	9.9899
205237_at	FCN1	4.4418	4.5917	1.8286	3.7772	3.7772	3.8571	3.7772	3.9803	3.7772	3.7772	0.3069	0.3067
205883_at	ZBTB16	7.2666	7.3007	4.9389	6.2105	6.7302	5.4312	6.1545	7.1694	6.1897	6.9616	3.2952	4.9256
206637_at	P2RY14	8.131	8.2879	9.5202	8.4034	8.6538	7.8086	7.7823	8.2144	10.0046	9.087	5.1416	6.6382
208546_x_at	HIST1H2BH	3.9776	4.2149	4.2949	3.3231	3.3231	3.3231	3.3231	3.3231	3.4531	3.3231	2.0638	2.6488
208703_s_at	APLP2	9.0899	8.7218	8.4505	8.9188	9.5111	9.0086	9.0717	9.3765	10.445	10.0098	6.2667	6.6259
209789_at	CORO2B	3.3956	4.0257	4.952	3.2581	3.2581	3.5573	3.6574	3.2581	3.2581	3.8734	2.3838	2.4267
209995_s_at	TCL1A	11.2467	11.4188	11.7519	11.5795	12.384	11.9656	11.9911	12.0554	12.6654	12.7473	9.6249	9.9472
210432_s_at	SCN3A	9.2183	9.2356	8.2414	8.5648	8.2651	8.128	7.6157	8.3167	9.3655	8.3566	5.0425	5.3001
212827_at	IGHM	12.8873	12.9242	12.9047	13.3109	13.5047	13.7695	13.5998	13.5318	13.4919	13.46	12.2772	12.0958
215071_s_at	HIST1H2AC	6.4583	6.4179	7.1641	4.6766	5.3902	5.1003	4.6766	5.1003	7.017	4.6766	2.2097	3.7674
220146_at	TLR7	4.4514	4.4191	3.898	3.6752	3.6752	3.6752	3.6752	3.6752	4.4337	3.3512	2.5703	2.6467
39318_at	TCL1A	11.2384	11.211	11.6136	11.6073	12.3388	12.0903	12.3437	12.0471	12.547	12.5268	9.6125	9.9425
201693_s_at	EGR1	2.6267	2.6466	2.6267	3.8044	4.083	4.3864	4.9945	3.9583	3.7376	3.8978	6.811	6.0027
201694_s_at	EGR1	2.9342	2.9342	2.9342	4.1979	4.1979	4.4513	4.1979	4.4513	4.5191	4.1979	8.594	7.9455
202393_s_at	KLF10	3.8425	3.7613	4.304	4.6293	3.5084	3.4403	3.2949	4.8449	4.1045	2.8312	6.6752	7.6328
202589_at	TYMS	2.2458	2.2458	2.5298	2.2036	2.203	2.203	2.2036	2.203	2.1094	2.203	3.8205	5.3514
204790_at	SMAD7	0.8425	1.0417	0.8132	2.317	2.317	2.317	2.317	2.317	2.317	2.317	4.7855	4.8977
206115_at	EGR3	4.3503	4.163	4.4226	5.3442	5.2373	5.2274	5.3213	5.2274	5.212	5.5445	7.4977	8.073
206150_at	CD27	6.6137	6.52	4.2331	4.5669	4.8246	4.5669	4.6198	4.8246	4.5651	4.5651	7.3146	6.7567
206584_at	LY96	4.6288	4.6288	3.6555	3.3149	3.72	3.3149	3.3149	5.2569	4.65	3.3149	6.0567	5.9324
208892_s_at	DUSP6	4.1012	4.3834	2.6708	5.409	4.2272	4.3846	4.2272	5.3066	5.6676	4.2272	6.6031	6.9313

ProbeID	GENE SYMBOL	Peripheral naïve B cells										Splenic naïve B cells	
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM338401	GSM338402
208977_x_at	TUBB2C	5.9896	5.6661	5.4804	4.5093	4.9458	4.9387	5.4833	5.5789	7.0953	5.5789	7.864	8.0681
209610_s_at	SLC1A4	1.4529	1.4529	1.9705	2.4168	2.5997	2.5567	4.3962	2.5994	2.4168	2.5572	5.1153	4.7987
209959_at	NR4A3	1.3735	1.3735	1.3735	2.4089	2.299	4.0012	2.6393	2.3465	2.299	2.299	4.2831	4.3087
211430_s_at	IGH@///IGHG1///IGHG2///IGHG3///IGHM///IGHV4-31	7.0291	7.0853	10.3196	4.9661	9.6145	6.6277	7.8184	9.9003	8.6189	5.9542	12.3748	10.9643
212124_at	ZMIZ1	5.0014	4.7285	3.7529	4.6295	4.8678	4.136	4.136	4.8815	4.9009	4.497	7.1972	7.1706
214508_x_at	CREM	2.5494	1.5119	0.7424	3.008	3.008	3.008	2.9417	2.9417	2.9484	2.9469	4.3709	6.2843
215118_s_at	IGHA1	4.0822	4.4184	5.6624	2.8098	3.2275	3.0022	5.1136	2.8122	2.6781	2.8215	7.7821	4.3999
217022_s_at	IGHA1///IGHA2	5.4483	5.5232	9.8559	3.5195	7.0508	6.5914	8.0991	6.9444	5.0758	3.5195	11.1385	7.036
218723_s_at	C13orf15	3.9474	4.12	2.3499	4.3405	4.3405	4.3405	4.3405	4.3405	4.3429	4.3405	6.1074	7.5369

Table 9. Differentially expressed probes/genes between peripheral and tonsilar naive B cells

ProbeID	GENE_SYMBOL	Peripheral naïve B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
117_at	HSPA6	6.4553	6.5615	6.5933	5.1081	5.2957	5.04	5.2051	5.04	5.0419	5.1081	2.8489	2.6825	3.0289
200931_s_at	VCL	7.436	7.5878	6.8837	6.8521	6.7173	6.2979	7.2889	6.3937	6.7649	6.7213	4.9312	4.8579	4.8567
201009_s_at	TXNIP	12.6438	12.6192	12.1744	12.516	12.946	11.8004	11.9463	12.4921	12.3132	12.5741	11.5413	11.2384	11.3542
201105_at	LGALS1	6.9555	6.8541	6.2481	5.1983	5.3361	5.345	4.5161	5.8517	5.7423	4.3111	3.9754	3.3961	3.9497
201136_at	PLP2	9.2149	9.1169	9.2488	7.7983	8.3873	7.2616	8.364	8.6481	9.2403	8.8344	7.3147	7.0286	7.1593
201426_s_at	VIM	10.5607	10.5458	10.7458	9.038	9.3631	9.0455	9.9795	10.1973	10.5584	10.3174	8.9104	8.9729	8.9944
201590_x_at	ANXA2	8.8673	8.9636	8.3525	7.0045	7.5838	7.0841	7.2568	8.3915	7.6975	7.6332	5.104	5.9125	5.9693
201841_s_at	HSPB1	7.5364	7.558	8.0474	5.9341	5.9225	5.9341	5.9341	5.9341	5.9829	5.9341	2.5817	1.8899	1.8674
201853_s_at	CDC25B	8.7386	8.751	8.7228	7.627	8.0673	7.4346	8.0499	7.9308	8.7576	7.703	6.0817	5.7517	5.6852
202708_s_at	HIST2H2BE	6.145	6.4218	6.5322	4.4742	4.4742	5.3414	5.9537	4.5739	4.2827	4.5548	1.8258	1.7088	1.7088

ProbeID	GENE_SYMBOL	Peripheral naïve B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
202833_s_at	SERPINA1	3.2883	3.4001	1.8991	3.0884	3.0884	3.0884	3.0884	4.0414	3.0884	3.0884	1.6957	1.6957	1.6957
203054_s_at	TCTA	6.7358	6.4758	5.9339	5.8701	6.0209	6.0209	6.0209	6.0209	6.306	6.0209	4.4857	4.5754	4.4857
203233_at	IL4R	12.4402	12.4045	11.1389	11.6992	11.6449	11.6699	11.811	11.3298	12.0618	12.4041	9.5318	9.921	9.9208
203535_at	S100A9	5.0368	4.7744	2.003	4.2488	4.2488	4.2488	4.2488	4.2488	4.2488	4.2488	1.5304	1.5304	1.5304
203596_s_at	IFIT5	5.6575	5.6985	4.6917	4.8566	4.8566	5.1368	4.8566	5.145	4.8566	4.9584	3.817	3.2248	3.3814
203865_s_at	ADARB1	8.1132	8.1943	7.9009	8.2428	8.6352	7.3326	6.6468	7.5774	9.5466	8.4589	6.1235	6.5216	6.9096
203973_s_at	CEBPD	3.5924	3.5252	1.9168	3.4234	3.4234	3.4234	3.4234	3.4234	3.4234	3.4234	1.7206	1.7206	1.7206
204081_at	NRGN	3.4592	3.5213	4.3612	3.1143	3.1143	3.1143	3.2149	3.1143	3.1143	3.1143	1.5705	1.5485	1.5485
204122_at	TYROBP	4.3565	4.2154	1.872	3.5432	3.5432	3.5432	3.5432	3.5432	3.5432	3.5432	1.4528	1.4528	1.4528
204805_s_at	H1FX	8.4581	8.3902	9.3175	7.3337	7.9265	8.2032	8.6755	8.2786	8.8701	8.7043	5.2666	5.8614	5.7915
204959_at	MNDA	6.4142	7.0732	5.7654	5.3968	4.1378	4.5861	6.1822	6.2495	6.025	3.9931	2.1879	2.753	2.4378
205237_at	FCN1	4.4418	4.5917	1.8286	3.7772	3.7772	3.8571	3.7772	3.9803	3.7772	3.7772	0.959	0.959	0.959
205269_at	LCP2	4.4958	4.0722	2.491	2.9891	3.0682	3.2816	3.6613	3.5986	3.403	3.5603	2.0861	2.0985	2.2589
205352_at	SERPINI1	7.1389	6.9487	6.7085	6.028	6.6443	6.459	6.028	6.6725	6.9412	6.8134	4.857	5.3983	5.0277
205412_at	ACAT1	6.6527	6.6223	5.9933	5.5475	5.4303	4.1233	5.1496	5.4982	6.5068	5.5189	4.407	4.0293	4.0552
205495_s_at	GNLY	4.8983	4.8765	1.8762	3.0783	3.0859	3.0783	3.1521	3.0783	3.0783	3.0783	1.2102	1.2102	1.2102
205671_s_at	HLA-DOB	10.4069	10.3221	10.8246	9.8585	10.5762	10.1405	10.1065	10.5374	10.7277	10.7319	9.5553	9.1244	9.2021
205718_at	ITGB7	8.2861	8.4397	8.2743	6.4112	7.4461	6.7646	7.449	7.9506	7.9506	7.1915	6.2237	6.0062	5.792
205821_at	KLRK1	6.2121	5.792	7.6796	5.8456	4.7471	5.8741	6.0143	4.2631	4.9999	6.5991	2.9718	2.5816	2.472
205883_at	ZBTB16	7.2666	7.3007	4.9389	6.2105	6.7302	5.4312	6.1545	7.1694	6.1897	6.9616	3.3834	3.7496	3.7496
206637_at	P2RY14	8.131	8.2879	9.5202	8.4034	8.6538	7.8086	7.7823	8.2144	10.0046	9.087	5.6049	5.6511	5.837
206715_at	TFEC	5.4416	5.4723	4.969	4.2825	4.4623	4.9588	4.9151	4.4623	4.0624	4.4623	3.1834	2.7402	2.743
207339_s_at	LTB	12.5057	12.5107	12.1202	11.5646	11.8956	11.4777	11.7446	11.868	12.3185	12.084	10.4888	10.2608	10.247
207826_s_at	ID3	6.7111	6.8627	6.878	5.969	5.969	6.0514	5.969	6.0514	5.9853	5.969	4.3118	4.383	4.5669
208248_x_at	APLP2	10.2624	10.2742	10.0833	10.6665	10.964	11.0883	10.2478	10.627	11.2025	11.289	9.4006	9.4195	9.4387
208546_x_at	HIST1H2BH	3.9776	4.2149	4.2949	3.3231	3.3231	3.3231	3.3231	3.3231	3.4531	3.3231	1.3651	1.3651	1.3651

ProbeID	GENE_SYMBOL	Peripheral naive B cells										Tonsilar naive B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
208683_at	CAPN2	8.6362	8.4433	7.9055	6.6433	7.6066	6.5094	6.6939	8.2018	8.1593	7.311	6.1276	6.5274	6.1685
208703_s_at	APLP2	9.0899	8.7218	8.4505	8.9188	9.5111	9.0086	9.0717	9.3765	10.445	10.0098	7.5971	7.574	7.3338
208704_x_at	APLP2	10.2112	10.0884	9.4787	10.2705	10.3694	10.1453	9.7473	10.0859	10.6364	10.4091	8.7166	8.6474	8.5743
208771_s_at	LTA4H	11.4904	11.4021	10.81	10.7809	11.0212	10.6043	10.7387	11.1969	11.6502	11.2331	9.8193	9.7796	9.8395
209398_at	HIST1H1C	6.2298	6.251	7.0759	4.4476	4.6816	4.4476	4.4476	4.7444	6.0379	4.4476	1.2658	1.8737	1.9182
209582_s_at	CD200	5.9856	5.7265	5.5753	5.6774	5.7203	5.7464	5.577	5.8696	6.7403	6.1159	4.2286	5.3395	4.2215
209789_at	CORO2B	3.3956	4.0257	4.952	3.2581	3.2581	3.5573	3.6574	3.2581	3.2581	3.8734	1.6876	1.6876	1.7391
209911_x_at	HIST1H2BD	7.2289	7.1883	7.5453	6.1706	6.6206	6.2038	6.1706	6.1934	7.5326	6.1706	4.0434	3.8384	4.0434
209995_s_at	TCL1A	11.2467	11.4188	11.7519	11.5795	12.384	11.9656	11.9911	12.0554	12.6654	12.7473	10.4556	10.5005	10.4835
210427_x_at	ANXA2	8.6724	8.7399	8.4319	7.5634	7.4121	6.8613	7.0923	8.1183	7.5564	7.6241	6.3352	5.4207	5.5604
210432_s_at	SCN3A	9.2183	9.2356	8.2414	8.5648	8.2651	8.128	7.6157	8.3167	9.3655	8.3566	4.0588	3.9663	4.3985
211999_at	H3F3B	12.2972	12.1997	12.4206	11.8457	12.1778	11.6962	11.7628	11.9553	12.1359	11.9299	11.0242	10.4589	10.6155
213539_at	CD3D	4.4075	4.503	2.0492	2.9805	2.9805	2.9805	2.9805	2.9805	2.9365	2.9437	1.5677	1.6124	1.5381
214146_s_at	PPBP	4.0321	4.115	4.8264	3.2295	3.2295	3.2295	3.2295	3.2295	3.2295	3.2295	0.7461	0.7461	0.7461
214290_s_at	HIST2H2AA3///HIST2H2AA4	9.9119	9.8458	10.7014	8.9149	9.9056	7.8022	8.704	9.7067	10.2678	9.3584	7.005	7.2258	6.9842
215071_s_at	HIST1H2AC	6.4583	6.4179	7.1641	4.6766	5.3902	5.1003	4.6766	5.1003	7.017	4.6766	1.3163	1.0082	0.9944
216517_at	HLA-C///IGKC///IGKV1-5	6.5551	6.0026	4.6657	4.5986	4.8958	4.5986	5.3555	4.6342	7.0772	4.669	3.1552	3.2469	3.3004
218280_x_at	HIST2H2AA3///HIST2H2AA4	8.6616	8.5615	8.9601	7.4138	8.3355	7.3699	7.7101	8.0249	8.5383	7.8324	5.7888	5.7799	5.9109
219049_at	ChGn	9.2014	9.3549	8.5627	6.8488	8.4911	6.2813	5.6682	8.3243	8.4706	7.4981	4.7565	4.0743	3.81
219077_s_at	WWOX	6.5838	6.6979	5.1583	6.421	5.3634	6.3869	6.5798	5.9459	6.8848	6.0211	4.7785	4.2125	4.3465
219452_at	DPEP2	8.0569	8.1519	7.0627	7.5083	7.2502	7.0433	6.373	7.3037	8.2349	6.9965	5.8459	5.7001	5.6593
219737_s_at	PCDH9	7.7024	7.7964	9.6908	9.2304	9.4327	8.2009	7.2851	7.95	9.1968	7.9749	6.1235	5.9566	6.0094
220146_at	TLR7	4.4514	4.4191	3.898	3.6752	3.6752	3.6752	3.6752	3.6752	4.4337	3.3512	2.083	2.1271	2.083

ProbeID	GENE_SYMBOL	Peripheral naïve B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
220987_s_at	C11orf17///NUAK2	9.2016	9.2934	9.1787	8.4734	8.7002	8.9647	8.9569	8.6832	9.4226	9.2859	7.0701	7.2264	7.2184
221731_x_at	VCAN	4.5381	4.4781	2.0461	3.7458	3.7458	3.8658	3.7458	3.7458	3.7458	3.7458	1.2041	1.2041	1.2041
222067_x_at	HIST1H2BD	7.6081	7.4774	8.088	6.7863	7.6529	6.2476	7.1444	6.9947	7.4069	6.8906	5.1177	5.3214	5.3586
37145_at	GNLY	4.6812	4.5387	1.8825	2.9794	2.9794	2.9794	2.9794	2.9794	2.9794	2.9794	1.2806	1.2806	1.2806
39318_at	TCL1A	11.2384	11.211	11.6136	11.6073	12.3388	12.0903	12.3437	12.0471	12.547	12.5268	10.5053	10.72	10.7334
56256_at	SIDT2	10.4285	10.4951	10.1439	9.7378	10.1239	9.7906	9.3088	9.6863	10.6997	10.0214	8.7289	8.5194	8.6137
200808_s_at	ZYX	3.8988	3.8806	3.9772	4.4736	4.097	4.2513	4.2513	4.2265	4.2268	4.1673	6.2957	6.4075	5.5129
200815_s_at	PAFAH1B1	5.6606	6.1624	6.2917	6.1144	6.4582	5.8776	6.1144	6.4032	7.2666	5.9955	7.8712	7.6974	8.1164
200953_s_at	CCND2	7.3646	7.5191	7.5361	7.5513	7.9497	7.4785	7.7398	7.9497	7.5425	7.6177	9.1093	9.686	9.4269
201170_s_at	BHLHB2	3.8466	3.908	3.6407	4.2736	3.8203	4.348	4.3836	4.2736	4.1833	4.2736	7.1817	7.2695	7.2254
201195_s_at	SLC7A5	3.0125	3.0222	3.3029	3.5451	3.5973	3.7306	3.7306	3.7306	3.2514	3.5518	5.1265	5.0915	5.0104
201303_at	EIF4A3	7.9836	8.2395	8.3108	8.2996	7.8748	8.2996	7.6914	8.4865	8.9213	8.0728	9.7125	9.0704	9.582
201445_at	CNN3	2.1674	2.5064	2.016	2.4499	2.43	2.4408	2.4408	2.4408	2.6615	2.4408	3.1992	3.9324	3.49
201585_s_at	SFPQ	7.7216	7.7489	7.0894	7.498	7.7261	7.5425	7.4517	7.6326	8.3097	8.2265	9.0183	9.0695	9.001
201586_s_at	SFPQ	8.4904	8.5224	7.4975	8.9103	8.9506	8.5257	7.5688	8.8897	9.8034	8.9656	10.4911	10.6578	10.6163
201625_s_at	INSIG1	2.2957	2.2957	2.2957	2.8152	2.8152	2.8152	2.8152	2.8152	2.8174	2.8152	5.184	4.8664	4.9335
201693_s_at	EGR1	2.6267	2.6466	2.6267	3.8044	4.083	4.3864	4.9945	3.9583	3.7376	3.8978	8.5197	8.3683	8.4964
201694_s_at	EGR1	2.9342	2.9342	2.9342	4.1979	4.1979	4.4513	4.1979	4.4513	4.5191	4.1979	10.1425	9.8753	9.9005
201703_s_at	PPP1R10	4.4089	4.9423	4.7671	5.3336	5.1581	5.1581	5.1581	5.3607	5.3336	5.3336	7.0193	7.2062	7.1437
201710_at	MYBL2	4.6908	4.8424	5.4207	4.7897	5.3477	5.0363	5.3513	4.7897	4.4703	5.0097	6.436	6.6288	6.5883
201733_at	CLCN3	1.9311	1.9311	1.9311	3.3129	2.2921	2.2784	2.2784	2.2784	2.2801	2.2784	3.6609	3.9572	3.9245
201761_at	MTHFD2	4.6112	4.9839	4.6392	5.337	5.2209	5.621	5.1973	5.3985	5.1689	4.8787	7.6152	7.5375	7.5707
201829_at	NET1	2.3907	2.3297	2.4567	2.8415	2.6091	2.7505	2.7505	2.7505	2.711	2.7505	4.1133	3.7045	4.7755
201939_at	PLK2	2.4876	2.4876	2.4876	3.0214	3.0214	3.0214	3.0214	3.0214	2.9561	3.0214	4.5355	5.2829	4.5812
201963_at	ACSL1	4.2898	4.2898	4.0745	5.2482	4.9037	5.2482	5.2482	5.2529	5.4135	4.8528	6.7423	7.4592	7.4224

ProbeID	GENE_SYMBOL	Peripheral naïve B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
202022_at	ALDOC	5.0456	4.9783	5.0861	4.694	5.0253	5.2738	5.4529	5.097	5.45	5.6182	6.4704	6.8299	6.928
202284_s_at	CDKN1A	5.7237	5.4745	5.539	6.2455	5.1728	6.2455	6.2455	6.2606	6.2455	5.0632	9.2106	9.0898	9.0392
202314_at	CYP51A1	3.2624	3.1413	2.3087	3.4909	3.6778	3.321	2.8323	3.4335	4.4854	3.4562	5.8206	6.0855	6.2448
202345_s_at	FABP5///LOC728641///LOC729163	6.2005	6.1578	4.8925	5.2768	4.6678	4.5356	6.0011	5.7135	6.1113	6.1113	7.3295	7.49	7.2775
202391_at	BASP1	9.1423	9.0801	9.0721	8.3178	9.2455	9.0709	9.4964	9.794	9.8552	9.9366	10.834	10.4232	10.5809
202393_s_at	KLF10	3.8425	3.7613	4.304	4.6293	3.5084	3.4403	3.2949	4.8449	4.1045	2.8312	6.8943	7.3284	7.8121
202439_s_at	IDS	4.2399	4.2399	4.2399	4.7902	4.7902	4.7557	4.6989	4.7568	4.4555	4.7902	6.6813	6.2563	6.4587
202464_s_at	PFKFB3	4.0681	4.067	3.8646	5.0593	5.0593	5.0593	5.0593	5.0593	5.0593	5.0593	7.6556	8.0278	8.1567
202503_s_at	KIAA0101	3.3447	3.046	4.3803	3.9629	3.2546	3.9629	4.5167	4.0913	2.6231	3.9305	6.6389	5.8019	6.2718
202539_s_at	HMGCR	4.9035	4.7383	3.9389	4.7452	5.2203	4.6653	4.3102	4.7838	5.2203	4.9509	5.9593	6.4781	6.2611
202589_at	TYMS	2.2458	2.2458	2.5298	2.2036	2.203	2.203	2.2036	2.203	2.1094	2.203	4.8982	3.9973	4.1889
202637_s_at	ICAM1	4.2871	4.2871	4.2871	4.9793	4.9223	4.9793	4.9793	4.9793	4.8494	4.9793	6.4719	6.5074	6.7762
202638_s_at	ICAM1	1.579	1.579	1.5841	2.5627	2.3442	2.3493	2.7283	2.3493	2.3442	2.3493	4.9493	4.8397	4.6844
202643_s_at	TNFAIP3	5.6459	5.998	5.8299	6.301	6.301	6.6203	6.5295	7.0021	7.5941	7.0285	10.2447	10.1241	10.1104
202644_s_at	TNFAIP3	7.1967	6.9126	7.5715	7.1007	7.9275	7.9543	7.1359	8.0556	8.5694	7.6726	10.4083	10.4439	10.4299
202768_at	FOSB	5.8566	5.9064	7.6899	6.2532	4.5522	8.3869	7.9482	8.6625	8.8564	8.0309	11.4993	11.2695	11.3073
202815_s_at	HEXIM1	4.2562	4.2562	4.2562	4.6708	4.6717	4.6717	4.6717	4.6717	4.7875	4.6717	6.2267	6.0451	6.0158
202861_at	PER1	5.4032	5.6295	5.5357	5.8164	5.8164	5.8164	5.6959	5.8164	5.9055	5.8164	7.5058	7.753	7.7397
202910_s_at	CD97	4.109	4.109	4.109	4.1143	4.623	4.5039	3.5996	4.623	4.9962	4.0474	5.5057	5.7059	5.7174
203004_s_at	MEF2D	2.4141	2.4141	2.4141	2.9103	2.7561	2.7561	3.202	2.7561	2.3526	2.7561	3.9067	4.4997	4.2219
203358_s_at	EZH2	2.1521	2.0701	2.0701	2.5833	2.272	2.2492	2.272	2.272	2.272	2.2167	4.1503	3.1031	3.7731
203394_s_at	HES1	2.508	2.9017	3.8789	3.4889	3.4889	3.4889	3.4889	3.4889	3.4889	3.4889	4.702	5.6202	5.2763
203542_s_at	KLF9	5.2621	5.5151	5.6006	6.1264	6.5937	5.6569	5.7869	5.9155	6.9835	5.8137	7.5952	8.0313	8.0078
203554_x_at	PTTG1	3.6109	3.946	4.8192	4.3314	4.3314	5.1553	4.3942	5.0819	3.4494	4.3314	6.2059	6.2887	6.2475

ProbeID	GENE_SYMBOL	Peripheral naïve B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
203579_s_at	SLC7A6	6.0455	5.6275	6.115	6.0473	6.6103	5.7494	5.5423	6.4782	6.922	6.5743	7.6264	7.5809	7.725
203643_at	ERF	2.3887	2.3887	2.3887	2.6582	2.6582	2.6582	2.6582	2.6527	2.6582	2.6582	3.6433	3.7848	3.8118
203725_at	GADD45A	5.796	5.9227	4.5431	5.3565	5.6325	6.2296	5.705	5.6325	5.168	5.659	7.4085	7.7537	7.2525
203749_s_at	RARA	3.0952	2.7883	2.8361	3.1542	3.0907	3.0907	3.1069	3.1069	3.1556	3.1069	5.2561	5.0556	5.5261
203936_s_at	MMP9	2.0146	2.0146	2.0146	2.2761	2.2761	2.2761	2.3697	2.2761	2.2761	2.2761	3.5617	3.2734	3.2806
204014_at	DUSP4	1.4084	1.4084	1.4084	2.2888	2.2888	2.2888	2.2888	2.2888	2.2888	2.2888	5.1832	5.4127	5.8714
204015_s_at	DUSP4	1.9253	1.9253	1.9253	2.2916	2.2916	2.2916	2.2916	2.2916	2.2916	2.2916	3.5558	3.5436	3.7795
204032_at	BCAR3	2.3214	2.2754	2.3226	2.6284	2.6284	2.6284	3.6241	2.6284	2.2953	2.6284	4.0995	4.4436	4.2005
204087_s_at	SLC5A6	3.3555	3.3555	3.3555	4.0494	4.0634	4.0634	4.0634	4.3883	4.0634	4.6402	6.5762	6.9433	6.9535
204093_at	CCNH	7.038	6.9736	6.2525	6.2206	6.8281	6.7206	6.3302	7.2275	7.5466	6.6858	8.6587	8.8225	8.6476
204106_at	TESK1	2.918	2.9564	1.8221	2.7957	2.7957	2.8036	2.7957	2.7957	2.8857	2.7957	4.3954	4.0989	4.1682
204244_s_at	DBF4	5.5219	5.6462	4.365	5.3973	5.7301	5.3973	3.6517	6.3508	7.0056	5.358	7.7989	7.9611	7.9717
204258_at	CHD1	6.6837	7.0786	7.0372	7.6942	7.9608	7.4258	5.1589	8.1205	8.7494	7.1377	8.9293	9.1823	9.2567
204567_s_at	ABCG1	2.3325	3.0415	3.046	3.369	3.0328	3.1013	3.0317	3.369	3.8889	3.369	4.6517	4.778	4.6711
204638_at	ACP5	7.0326	6.1764	4.8751	5.7439	6.1022	4.8789	5.7439	5.9359	6.4738	4.8789	7.7075	7.5825	7.6253
204790_at	SMAD7	0.8425	1.0417	0.8132	2.317	2.317	2.317	2.317	2.317	2.317	2.317	7.5013	7.487	7.5929
204794_at	DUSP2	5.1495	5.2397	4.9846	4.7104	4.7104	5.2146	4.7104	5.2146	5.6489	5.6727	7.2022	6.9829	6.863
204852_s_at	PTPN7	6.2765	5.7228	4.7306	5.7175	5.7175	5.7202	6.0409	6.0409	6.042	5.7175	7.5581	7.9143	7.8301
204970_s_at	LOC644132///MAFG	2.2325	2.2325	1.9931	2.7865	2.5505	2.5505	2.7865	2.7865	2.8797	2.6005	4.0277	3.8409	3.9971
204995_at	CDK5R1	3.6963	4.2478	3.7028	4.7003	5.1321	4.9768	4.9768	4.7681	4.9961	5.0105	7.5316	8.1056	8.018
205027_s_at	MAP3K8	5.9636	5.8188	5.4234	6.8449	7.0021	6.6061	5.6355	6.8449	8.2063	6.7883	8.8956	8.6826	8.4298
205114_s_at	CCL3///CCL3L1///CCL3L3///LOC728830///LOC730422	3.098	3.2112	2.6615	3.5263	3.4506	3.5263	3.4506	3.4948	3.2367	3.4986	5.5947	5.6625	5.64
205193_at	MAFF	3.4217	3.4217	3.4257	3.9538	3.8341	3.897	3.897	3.897	3.897	3.897	5.7855	6.2083	6.0223
205207_at	IL6	6.0909	6.3646	6.9828	5.879	5.5116	6.3864	6.0564	6.6107	6.3864	6.2292	7.4048	7.8749	7.8922

ProbeID	GENE_SYMBOL	Peripheral naïve B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
205241_at	SCO2	2.912	2.6314	1.7929	2.8738	2.8738	2.8738	2.8738	2.8738	2.8738	2.8738	4.0727	4.3384	4.3875
205249_at	EGR2	2.1496	1.9869	1.9869	2.5039	2.5039	2.5039	2.5039	2.4366	2.3922	2.5039	5.3092	3.8838	4.4932
205436_s_at	H2AFX	6.1427	5.944	4.945	5.4754	5.7289	6.2155	5.8502	5.8245	6.6246	5.5584	7.7579	8.1598	8.173
205544_s_at	CR2	8.3265	8.2629	7.8083	8.7599	9.278	8.8382	8.4655	8.9389	9.278	8.6493	10.1303	10.1582	10.1225
205691_at	SYNGR3	2.6003	2.6003	2.6003	3.3069	3.3069	3.3069	3.3069	3.0564	2.6364	2.8363	4.9541	4.5624	4.5758
206074_s_at	HMGA1	5.8391	5.5866	6.3018	5.7202	6.3679	6.4208	6.3679	6.3679	6.3679	6.3679	7.7092	8.3982	8.3813
206115_at	EGR3	4.3503	4.163	4.4226	5.3442	5.2373	5.2274	5.3213	5.2274	5.212	5.5445	9.2764	9.5629	9.5171
206181_at	SLAMF1	3.3941	3.4958	3.8254	3.4519	3.4938	3.4938	3.5184	3.5184	3.7909	3.5184	4.9437	5.118	5.303
206244_at	CR1	6.0393	6.0561	5.0434	6.7034	6.7273	6.0409	5.2771	6.4069	6.3592	5.9398	7.2146	7.7879	7.4594
206342_x_at	IDS	4.2886	4.648	3.9798	4.8192	4.8856	4.6434	4.59	4.866	5.3617	4.8192	6.7602	6.8979	6.9058
206472_s_at	TLE3	3.3695	3.3695	3.3695	3.6649	3.4599	3.3934	3.6621	4.3349	3.8076	3.6383	4.9083	5.5455	5.3467
206584_at	LY96	4.6288	4.6288	3.6555	3.3149	3.72	3.3149	3.3149	5.2569	4.65	3.3149	5.611	5.5066	5.5573
206675_s_at	SKIL	2.0112	2.0112	2.0112	2.317	2.317	2.317	2.317	2.317	2.3171	2.317	4.0471	3.5322	3.4611
206965_at	KLF12	2.0381	2.0381	2.0381	2.2722	2.4199	2.363	2.2722	2.2722	2.2722	2.2722	3.2899	2.9744	3.7197
207571_x_at	C1orf38	4.629	4.629	4.5562	4.8875	5.7972	4.8148	3.5328	4.8047	4.5675	4.2292	6.2659	6.3079	6.0368
207574_s_at	GADD45B	8.6315	8.8566	8.3663	8.5746	8.8052	9.6341	8.9643	9.2627	9.67	9.037	10.4539	10.68	10.5832
207978_s_at	NR4A3	1.2659	1.2659	1.2659	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	6.264	5.6327	6.0938
208836_at	ATP1B3	7.4266	7.461	7.2987	7.813	8.084	7.813	6.8955	8.084	8.2199	7.813	9.8475	10.0576	10.0368
208892_s_at	DUSP6	4.1012	4.3834	2.6708	5.409	4.2272	4.3846	4.2272	5.3066	5.6676	4.2272	8.426	8.518	8.5701
208893_s_at	DUSP6	2.3689	2.3689	2.1298	2.9467	2.9467	2.9467	2.9467	2.9467	2.9013	2.9467	5.6796	4.9639	5.1363
208926_at	NEU1	3.3194	3.4425	3.7969	3.6587	3.5524	3.964	4.3438	3.8047	3.9074	3.6587	5.4377	4.9851	5.1073
208977_x_at	TUBB2C	5.9896	5.6661	5.4804	4.5093	4.9458	4.9387	5.4833	5.5789	7.0953	5.5789	7.8695	7.767	7.7586
209024_s_at	SYNCRIP	6.0346	5.88	6.73	6.8562	7.1248	6.6324	6.2471	6.8967	7.3605	6.6042	8.3632	8.3229	8.4171
209301_at	CA2	2.5689	2.1285	2.2088	2.6463	2.5933	2.6463	2.6463	2.9015	2.6463	2.6463	5.0488	4.8141	3.9325
209324_s_at	RGS16	1.7126	1.7126	1.7126	2.2969	2.2969	2.2969	2.2969	2.2969	2.2969	2.3024	3.6544	5.3307	4.9338
209574_s_at	C18orf1	1.659	1.659	1.659	2.3005	2.3005	2.3005	2.4232	2.3005	2.3005	2.3005	4.4012	4.9177	4.9405

ProbeID	GENE_SYMBOL	Peripheral naïve B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
209610_s_at	SLC1A4	1.4529	1.4529	1.9705	2.4168	2.5997	2.5567	4.3962	2.5994	2.4168	2.5572	7.3069	6.6876	6.5541
209626_s_at	OSBPL3	2.8294	2.7376	2.2471	3.0695	3.0695	3.0695	3.0695	3.2914	2.4991	2.8652	3.54	4.3947	4.5782
209681_at	SLC19A2	2.0762	1.4685	1.1878	2.4727	2.4727	2.4727	2.4727	2.4727	2.4727	2.4727	6.1932	6.0258	5.8003
209683_at	FAM49A	4.6301	4.8417	5.0927	5.9906	5.5029	4.9563	4.9838	5.305	6.272	4.8035	6.8027	6.7879	6.7766
209876_at	GIT2	3.9145	3.9425	3.9145	3.9631	4.271	4.271	4.109	4.271	5.2908	4.271	5.3792	5.8559	6.115
209959_at	NR4A3	1.3735	1.3735	1.3735	2.4089	2.299	4.0012	2.6393	2.3465	2.299	2.299	6.2043	6.6588	6.7786
210001_s_at	SOCS1	4.6836	4.5568	3.4851	3.9425	5.0173	4.2016	4.2631	4.9077	4.8646	5.2137	6.6028	6.6912	6.6679
210258_at	RGS13	1.2947	1.2947	1.2947	2.2896	2.2896	2.2896	2.2896	2.2896	2.2896	2.2896	6.0915	5.6455	5.8789
210275_s_at	ZFAND5	9.3431	9.4053	8.9671	9.3291	9.6838	8.9017	8.3126	9.7953	10.1807	9.4576	11.2292	10.6806	10.5683
210785_s_at	C1orf38	5.8339	5.7453	4.2961	5.0217	6.2729	4.9923	4.9923	5.7635	5.0247	4.2368	6.4403	6.8789	6.7169
211430_s_at	!GH@///IGHG1///IGHG2///IGHG3///IGHM///IGHV4-31	7.0291	7.0853	10.3196	4.9661	9.6145	6.6277	7.8184	9.9003	8.6189	5.9542	11.226	11.255	11.3418
211458_s_at	GABARAPL1///GABARAPL3	2.5368	2.6109	1.3409	2.6734	2.6734	2.6734	2.6734	2.6734	2.6734	2.6734	4.7261	4.9879	4.9478
211725_s_at	BID	2.6012	2.5744	1.8966	2.7815	2.8662	2.8662	2.8662	2.8662	2.8568	2.8662	4.5369	4.3961	4.2845
211947_s_at	BAT2D1	2.096	2.1039	3.0801	3.1417	3.1417	3.4292	3.1417	3.4242	3.1417	3.1417	6.2436	6.5059	6.2052
212124_at	ZMIZ1	5.0014	4.7285	3.7529	4.6295	4.8678	4.136	4.136	4.8815	4.9009	4.497	7.8172	7.783	7.7692
212196_at	IL6ST	4.5702	4.5702	4.5702	5.1467	4.9482	4.9482	5.2142	4.9482	4.9394	4.9482	6.1178	7.0329	7.0273
212274_at	LPIN1	3.4905	3.5347	3.4905	4.3854	4.2288	4.3854	4.3191	4.3436	4.3191	4.2878	5.6109	5.9395	5.9883
212276_at	LPIN1	5.8822	6.045	5.6088	6.6987	6.6987	6.6987	5.4661	6.6987	6.673	6.6987	8.8476	8.9828	9.0513
212533_at	WEE1	6.932	6.5941	7.6239	7.977	7.977	6.6828	6.9856	7.8891	6.7595	7.1747	8.7827	8.9775	9.0348
212665_at	TIPARP	5.7363	5.5199	4.1462	5.8557	5.9953	5.8841	5.8534	5.8557	6.2628	6.1334	8.5851	8.8154	8.8127
212750_at	PPP1R16B	8.7285	8.5941	8.3108	8.5299	9.1734	8.2545	8.2751	9.2107	9.5043	8.9489	10.3758	10.3323	10.4153
212810_s_at	SLC1A4	1.9509	1.9509	1.9079	2.5139	2.3395	2.6626	2.3395	2.3395	2.3182	2.3182	4.1777	4.1659	4.859
212964_at	HIC2	3.3984	3.3974	3.3974	4.0414	4.0414	4.0152	4.0152	4.0414	4.0414	4.0414	5.7025	5.9617	5.6229

ProbeID	GENE_SYMBOL	Peripheral naïve B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
213038_at	RNF19B	3.1425	3.4361	2.0015	3.0391	3.1056	2.9284	3.0391	2.58	3.1168	2.947	4.7686	4.5035	4.534
213138_at	ARID5A	4.8805	5.1962	5.1331	4.8756	5.6653	5.5494	4.6021	5.3617	5.6206	5.5684	6.7409	7.3385	6.9365
213146_at	JMJD3	3.1041	3.1507	3.5283	4.1216	4.0539	4.2941	4.1216	3.5016	4.2108	4.1216	6.6442	6.9326	6.9177
213450_s_at	ICOSLG	2.365	2.365	2.365	2.6749	2.6749	2.6749	2.6749	2.6765	2.6749	2.6749	3.5205	4.1346	4.0804
213638_at	PHACTR1	2.7728	2.5718	1.6859	2.6716	2.6716	2.6716	2.6716	2.6863	3.107	2.6716	5.2943	5.1569	5.238
213726_x_at	TUBB2C	6.6427	6.5341	6.6926	6.1306	6.7309	6.2491	6.6863	6.7309	7.4782	6.7309	8.6421	8.5811	8.647
213820_s_at	STARD5	1.9109	1.9131	1.9109	2.2983	2.2983	2.2983	2.2983	2.2983	2.2983	2.2983	3.2643	4.1279	4.5019
214112_s_at	CXorf40A/// CXorf40B	5.8456	5.848	6.0205	6.1782	6.1782	6.3456	6.1782	6.2473	7.1387	6.1782	7.7456	7.6568	7.795
214157_at	GNAS	3.1372	2.9177	3.8085	3.6108	3.6108	3.6108	3.6108	4.0919	3.9671	3.6108	5.2993	5.4046	5.4189
214352_s_at	KRAS	4.828	4.8842	6.6736	6.3874	6.6503	6.5122	5.3902	6.6657	7.302	6.1614	8.7033	8.6621	8.8692
214446_at	ELL2	1.9105	1.9314	1.9651	2.6786	2.6786	2.7935	2.7041	2.6786	2.6294	2.6379	5.6669	5.5917	5.7525
214508_x_at	CREM	2.5494	1.5119	0.7424	3.008	3.008	3.008	2.9417	2.9417	2.9484	2.9469	7.601	7.3676	7.4605
215092_s_at	NFAT5	1.8884	1.8884	2.0731	2.3047	2.3047	2.3047	2.3047	2.3047	2.3047	2.3047	3.2297	4.1313	3.9156
215501_s_at	DUSP10	3.7192	3.8957	3.1959	3.788	3.788	3.788	3.788	3.788	3.2734	3.7469	5.1646	5.6793	5.3858
215630_at	NA	2.1172	1.6639	1.8635	2.7343	2.3495	2.3318	2.3318	2.3318	2.3318	2.3318	4.5554	4.1973	4.6879
215706_x_at	ZYX	3.2139	3.4106	3.6262	3.7733	3.7733	3.7946	3.7946	3.7946	3.4507	3.7946	5.4255	5.5547	5.2225
215711_s_at	WEE1	2.7519	2.7551	4.2598	3.6773	3.6773	3.2758	3.6773	3.9309	2.8862	3.6773	5.1087	5.55	5.766
215967_s_at	LY9	7.2449	7.201	6.7515	6.7809	7.0756	7.9112	6.9189	7.9131	7.7736	7.454	9.068	9.076	9.0598
216125_s_at	RANBP9	1.9457	1.9457	1.9457	2.4369	2.4519	2.4519	2.4519	2.5733	2.865	2.4519	3.793	5.1677	5.3116
216350_s_at	ZNF10	2.0742	2.0742	2.0742	2.4379	2.4564	2.5644	2.4564	2.4564	2.4564	2.3276	3.2876	4.2591	3.8478
216361_s_at	MYST3	1.4501	1.4501	1.6233	2.267	2.267	2.267	2.9364	2.267	2.324	2.267	5.1674	5.4468	5.4063
216607_s_at	CYP51A1	5.858	5.4772	5.9688	6.4581	5.8924	5.6066	6.2711	6.1993	6.076	6.4212	7.9078	7.8068	8.1543
217022_s_at	IGHA1///IGHA2	5.4483	5.5232	9.8559	3.5195	7.0508	6.5914	8.0991	6.9444	5.0758	3.5195	8.0706	8.0947	8.1115
217741_s_at	ZFAND5	8.034	7.833	7.4362	7.9144	8.3711	7.1124	7.5046	8.6471	9.2517	8.4281	10.3013	10.4044	10.2248
218039_at	NUSAP1	3.706	3.706	3.706	3.9245	3.9245	4.0523	3.9245	3.9245	3.8542	3.9245	6.2018	4.9278	5.5098

ProbeID	GENE_SYMBOL	Peripheral naive B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
218094_s_at	C20orf169-DBNDD2///DBNDD2	1.5942	1.5942	1.5942	2.2875	2.2875	2.2875	2.2875	2.2875	2.2875	2.2875	5.2028	4.5247	4.7361
218189_s_at	NANS	4.425	4.6387	4.0043	4.7524	4.7729	4.9833	4.7524	4.8019	4.5889	4.7524	6.3522	6.5506	6.5892
218204_s_at	FYCO1	2.4615	2.6527	2.4218	3.2054	3.1856	2.9191	3.1244	2.9191	2.8985	2.9874	4.1988	4.4016	4.2744
218350_s_at	GMNN	2.4477	2.1426	2.1426	2.7505	2.6273	2.647	2.6986	2.761	2.7505	2.7825	5.0066	4.4999	5.192
218546_at	C1orf115	1.6187	1.6427	2.2196	2.6334	2.6334	2.6866	2.7184	2.5645	2.557	2.557	5.8854	5.3855	5.365
218723_s_at	C13orf15	3.9474	4.12	2.3499	4.3405	4.3405	4.3405	4.3405	4.3405	4.3429	4.3405	8.8291	8.821	8.8026
218793_s_at	SCML1	3.4128	3.2271	2.1258	3.4043	3.226	3.1505	2.9241	3.7926	4.9794	3.1505	5.2262	5.3187	5.0971
218990_s_at	SPRR3	3.6588	3.6588	3.6588	4.049	4.049	4.049	4.049	4.049	4.049	4.049	5.2209	5.6131	5.4709
219228_at	ZNF331	6.7325	6.7186	6.374	6.8231	7.4935	7.0973	6.8231	7.4252	8.3995	6.9875	10.1999	10.2452	10.2919
219347_at	NUDT15	1.7779	1.7803	1.7657	2.3724	2.3724	2.3724	2.3724	2.3724	2.3724	2.3724	4.197	4.4836	4.5467
219518_s_at	ELL3	3.5957	3.8993	2.3551	3.4402	3.4402	3.6641	3.4818	3.6641	4.9016	3.5844	5.8448	5.6496	5.6588
219681_s_at	RAB11FIP1	5.7429	5.5674	5.6542	6.2316	7.1451	5.3347	4.9615	6.7457	7.4975	6.6863	8.6275	8.6826	8.7936
219869_s_at	SLC39A8	2.0738	2.2869	2.0716	2.3475	2.3475	2.3475	2.3475	2.3475	2.3475	2.3475	3.4576	4.1376	3.552
220215_at	ZNF669	5.1256	4.5914	5.2359	5.9454	5.4045	6.0499	5.1303	4.8128	5.7913	5.3006	6.8616	6.6488	7.166
220266_s_at	KLF4	4.6949	4.6949	6.1319	5.71	5.6702	5.6702	5.6702	5.71	7.1793	5.7897	8.477	8.9074	8.8705
220330_s_at	SAMSN1	5.3731	5.3834	4.3565	6.2777	5.1732	5.1989	5.1996	5.0333	5.1237	4.4808	7.7212	7.6027	7.7277
221563_at	DUSP10	3.2839	3.2087	1.8706	3.3082	3.322	3.3082	3.3082	3.2865	3.3082	3.3082	6.158	6.2247	6.2546
221616_s_at	TAF9B	1.785	2.3499	1.9141	2.459	2.4589	2.459	2.4589	2.459	2.459	2.459	4.1102	4.3464	4.3325
221617_at	TAF9B	2.518	2.5159	2.5159	3.3485	3.3485	3.3485	3.3485	3.2998	3.7786	3.3219	6.5596	5.6475	6.5159
221840_at	PTPRE	3.0405	2.9896	2.594	4.0308	3.2767	3.6051	3.2767	3.2801	3.2767	3.2767	4.7536	5.1898	5.1463
222243_s_at	TOB2	4.4865	4.5252	3.0851	4.1216	4.0749	5.0106	3.9795	4.7777	4.8925	4.1345	6.2294	6.7484	6.6725
222313_at	NA	1.3769	1.3731	1.9242	2.9879	2.3157	2.3779	2.3095	2.3095	2.3095	2.3095	4.95	5.8564	5.8554
36564_at	RNF19B	2.4896	2.7562	2.65	2.9823	2.9912	3.3822	3.5491	2.9088	2.6858	2.9912	4.6873	4.4545	4.8955
36711_at	MAFF	4.133	4.2473	1.2948	3.5668	3.5758	3.5668	3.5668	3.5668	5.2355	3.5668	6.514	6.7002	6.6396
36829_at	PER1	3.0209	2.9738	3.4644	4.2599	3.8156	3.9079	4.1437	3.6418	3.5959	3.6476	6.7028	6.7741	6.6889

ProbeID	GENE_SYMBOL	Peripheral naïve B cells										Tonsilar naïve B cells		
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM322407	GSM322408	GSM322409
41386_i_at	JMJD3	4.0908	4.3566	4.6831	4.727	5.2649	4.8042	5.1825	5.1825	5.1825	5.1053	8.2903	7.7604	7.888
41387_r_at	JMJD3	3.0844	3.0727	3.7751	3.8422	3.6426	3.8709	3.8352	3.8325	3.8709	3.8421	6.0508	6.1837	6.1956
41577_at	PPP1R16B	7.9395	7.992	6.566	7.3055	7.9888	7.1492	6.7008	7.955	8.6768	7.7539	9.0767	9.2749	9.3157
AFFX-HUMGAPDH/M33197_5_at	NA	9.4342	9.32	8.9765	8.6318	9.2455	7.659	9.3101	9.2731	9.6682	9.342	10.3291	10.5048	10.553

Table 10. Differentially expressed probes/genes between splenic and tonsilar naive B cells

ProbeID	GENE_SYMBOL	Splenic naïve B cells		Tonsilar naïve B cells		
		GSM338401	GSM338402	GSM322407	GSM322408	GSM322409
201841_s_at	HSPB1	3.725	4.5506	2.5817	1.8899	1.8674
202708_s_at	HIST2H2BE	4.4289	2.7229	1.8258	1.7088	1.7088
203186_s_at	S100A4	8.1725	8.2214	5.5834	6.0108	5.9679
204959_at	MNDA	4.7379	3.8525	2.1879	2.753	2.4378
209398_at	HIST1H1C	3.5156	4.2676	1.2658	1.8737	1.9182
215071_s_at	HIST1H2AC	2.2097	3.7674	1.3163	1.0082	0.9944
219049_at	ChGn	6.6175	7.7495	4.7565	4.0743	3.81
204790_at	SMAD7	4.7855	4.8977	7.5013	7.487	7.5929
207978_s_at	NR4A3	4.0585	4.0585	6.264	5.6327	6.0938
209959_at	NR4A3	4.2831	4.3087	6.2043	6.6588	6.7786
214508_x_at	CREM	4.3709	6.2843	7.601	7.3676	7.4605
222313_at	NA	3.8428	3.8428	4.95	5.8564	5.8554

Table 11. Differentially expressed probes/genes between naïve and memory B cells

Probe ID	GENE_SYMBOL	Peripheral naive B cells										Splenic naïve B cells		Peripheral memory B cells				Splenic memory B cells	
		GSM32 2401	GSM32 2402	GSM32 2403	GSM56 5308	GSM56 5309	GSM56 5310	GSM56 5311	GSM56 5312	GSM56 5313	GSM56 5314	GSM33 8401	GSM33 8402	GSM56 5315	GSM56 5316	GSM56 5317	GSM56 5318	GSM33 8405	GSM33 8406
201160_s_at	CSDA	10.7315	10.8203	9.9565	11.8063	11.8115	10.7304	10.2371	10.7338	11.3684	10.5787	9.9523	10.5839	7.6418	6.9557	8.4229	6.7316	9.1281	6.5557
202724_s_at	FOXO1	8.3768	8.4193	7.9663	8.8231	8.905	8.4857	7.8702	8.8134	9.5149	8.2934	7.636	8.1454	7.2697	6.7814	6.3091	6.8	7.9053	6.9183
203140_at	BCL6	8.7243	8.6238	8.0022	9.5713	9.434	8.7024	8.4282	7.9502	9.4581	8.7775	7.8358	7.7419	5.7996	5.466	6.2111	5.466	7.1275	6.2885
203233_at	IL4R	12.4402	12.4045	11.1389	11.6992	11.6449	11.6699	11.811	11.3298	12.0618	12.4041	9.8183	9.9899	8.8511	7.4502	7.4338	7.4338	9.3089	5.7969
203315_at	LOC729030/// NCK2	9.6861	9.8008	9.1091	9.4681	9.9912	9.3783	9.4681	9.5659	10.348	10.0378	8.3637	9.0572	7.7765	7.9685	7.8136	7.7143	8.6353	7.6636
203408_s_at	SATB1	8.8928	8.9731	9.1963	10.2507	10.2343	10.0089	9.113	9.6957	10.4198	9.6793	8.6725	8.4157	7.6657	7.4996	7.651	5.6737	8.6016	7.6284
203520_s_at	ZNF318	7.3518	7.409	6.8592	6.7142	8.0133	7.2807	7.9819	8.546	8.9724	9.1754	7.3377	7.4526	5.7533	5.2599	4.4674	4.8524	7.2175	5.8041
203865_s_at	ADARB1	8.1132	8.1943	7.9009	8.2428	8.6352	7.3326	6.6468	7.5774	9.5466	8.4589	6.2919	6.7031	5.8261	5.5342	4.4186	5.8795	6.6481	4.3728
204805_s_at	H1FX	8.4581	8.3902	9.3175	7.3337	7.9265	8.2032	8.6755	8.2786	8.8701	8.7043	6.5157	5.6825	7.5762	6.3742	5.4367	5.4367	7.064	5.5356
205790_at	SKAP1	6.461	6.6507	6.5543	6.3802	6.1969	6.2067	6.2515	5.7283	7.2585	6.4038	6.0419	5.9549	4.182	4.3108	4.259	4.8492	5.2941	3.6026
205821_at	KLRK1	6.2121	5.792	7.6796	5.8456	4.7471	5.8741	6.0143	4.2631	4.9999	6.5991	3.9256	4.7976	4.6543	4.1244	3.9412	4.4867	3.0401	2.6345
205883_at	ZBTB16	7.2666	7.3007	4.9389	6.2105	6.7302	5.4312	6.1545	7.1694	6.1897	6.9616	3.2952	4.9256	4.4994	4.4994	4.604	4.8429	5.8227	4.4464
206637_at	P2RY14	8.131	8.2879	9.5202	8.4034	8.6538	7.8086	7.7823	8.2144	10.0046	9.087	5.1416	6.6382	5.7815	4.3883	4.4164	5.7815	6.7174	3.7748
208248_x_at	APLP2	10.2624	10.2742	10.0833	10.6665	10.964	11.0883	10.2478	10.627	11.2025	11.289	8.6581	8.5028	7.0126	6.9281	7.2056	6.2341	8.4583	7.2537
208702_x_at	APLP2	9.005	9.1266	9.4474	9.2161	9.5645	8.614	9.2635	9.2635	10.0805	9.9101	7.677	7.9416	6.8836	6.5493	7.6879	7.3823	8.0585	7.2593
208703_s_at	APLP2	9.0899	8.7218	8.4505	8.9188	9.5111	9.0086	9.0717	9.3765	10.445	10.0098	6.2667	6.6259	5.4699	5.4837	5.6939	3.8543	6.89	5.7071
208704_x_at	APLP2	10.2112	10.0884	9.4787	10.2705	10.3694	10.1453	9.7473	10.0859	10.6364	10.4091	8.2591	8.105	6.8583	6.479	8.1225	7.2393	8.3449	7.1785

Probe ID	GENE_SYMBOL	Peripheral naïve B cells										Splenic naïve B cells		Peripheral memory B cells				Splenic memory B cells	
		GSM32 2401	GSM32 2402	GSM32 2403	GSM56 5308	GSM56 5309	GSM56 5310	GSM56 5311	GSM56 5312	GSM56 5313	GSM56 5314	GSM33 8401	GSM33 8402	GSM56 5315	GSM56 5316	GSM56 5317	GSM56 5318	GSM33 8405	GSM33 8406
t																			
209201_x_at	CXCR4	12.8169	12.812	12.8434	13.0208	13.3307	12.3948	13.1487	13.2899	13.3339	13.5454	12.0939	12.6754	11.5476	11.9088	11.8366	11.7272	12.1153	12.387
209374_s_at	IGHM	13.5767	13.2449	13.3865	13.5742	13.8437	13.543	13.9001	13.7809	13.9617	13.9899	12.6302	12.5639	11.8483	10.5882	10.6072	10.4799	12.0732	10.2448
209582_s_at	CD200	5.9856	5.7265	5.5753	5.6774	5.7203	5.7464	5.577	5.8696	6.7403	6.1159	3.8215	4.9029	3.3772	3.3772	3.3224	3.3772	4.729	2.5535
209583_s_at	CD200	8.0945	8.2647	7.9537	8.4471	8.633	8.2855	8.0899	8.9978	9.3163	9.3646	6.8042	7.1337	4.6997	3.0847	4.0922	4.8959	6.6188	3.1546
209732_at	CLEC2B	10.4613	10.3984	9.367	9.5243	10.3115	9.3015	9.1167	10.0447	10.3637	9.7806	9.2894	9.7349	8.6171	7.9451	8.226	7.9744	8.6465	7.6454
209994_s_at	ABCB1 ///ABCB4	7.9659	7.9599	6.98	8.588	9.0691	8.5424	6.9828	8.759	9.3258	8.4827	7.4017	7.484	6.0772	5.1276	6.6545	4.6823	7.4609	6.8409
209995_s_at	TCL1A	11.2467	11.4188	11.7519	11.5795	12.384	11.9656	11.9911	12.0554	12.6654	12.7473	9.6249	9.9472	5.9845	3.548	4.3297	5.9622	7.8365	3.5955
210432_s_at	SCN3A	9.2183	9.2356	8.2414	8.5648	8.2651	8.128	7.6157	8.3167	9.3655	8.3566	5.0425	5.3001	5.4784	4.2073	5.5716	6.4638	6.6834	4.1474
210644_s_at	LAIR1	8.7152	8.4004	8.6369	8.2583	8.6592	8.0565	8.6949	8.5378	9.4506	9.5291	7.9074	7.3451	6.5274	6.9109	6.7084	7.1073	7.3951	6.8564
211404_s_at	APLP2	6.9029	6.7027	6.2742	6.8325	7.235	6.7991	6.3269	6.8045	7.8591	7.5136	4.8323	5.4176	3.7838	4.1484	4.4144	3.7565	5.038	4.6728
211919_s_at	CXCR4	12.8518	12.8184	13.0237	13.0999	13.3046	12.4896	13.1585	13.3272	13.2744	13.537	12.1832	12.5753	11.619	11.8566	11.982	11.7732	12.0599	12.3309
212560_at	C11orf32	8.1056	8.0157	7.6571	8.4863	8.8868	8.0002	8.4115	8.2348	9.2481	9.2737	7.2724	7.9149	7.0881	5.5178	6.0206	6.2371	7.9293	6.7621
212611_at	DTX4	8.4051	8.7298	8.525	8.6531	8.8333	8.4059	8.7659	8.6679	8.7575	9.3022	7.5511	7.9499	6.7307	6.7305	6.6374	7.3324	7.4704	6.5541
212827_at	IGHM	12.8873	12.9242	12.9047	13.3109	13.5047	13.7695	13.5998	13.5318	13.4919	13.46	12.2772	12.0958	10.227	9.3993	10.0207	9.5325	11.2811	9.4299
213674_x_at	IGHD	11.5477	11.6766	12.1693	10.901	12.0785	11.823	12.7445	12.2805	12.7213	12.808	11.0291	10.8564	9.3406	6.8617	6.5902	5.7322	9.5194	5.1994
214290_s_at	HIST2H2AA3///HIST2	9.9119	9.8458	10.7014	8.9149	9.9056	7.8022	8.704	9.7067	10.2678	9.3584	8.3403	7.8401	8.6878	7.7759	7.4404	7.4404	7.7754	7.6802

Probe ID	GENE_SYMBOL	Peripheral naive B cells										Splenic naive B cells		Peripheral memory B cells				Splenic memory B cells	
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM338401	GSM338402	GSM565315	GSM565316	GSM565317	GSM565318	GSM338405	GSM338406
	H2AA4																		
214875_x_at	APLP2	7.8322	8.7491	8.0456	8.3256	8.4656	7.246	8.0326	8.0907	9.1983	8.8411	6.3834	7.0802	6.2194	6.2194	6.0811	5.9974	6.7424	6.2643
215621_s_at	IGHD	8.8744	9.1606	9.2913	8.9919	10.1743	8.675	10.6944	10.4416	10.8631	11.0821	8.2193	8.2876	7.1729	4.0191	3.8302	3.2986	7.0088	3.4255
215925_s_at	CD72	9.7123	9.6722	9.8059	10.1629	10.2735	10.1703	9.8156	10.7858	10.875	10.738	9.8458	9.7796	7.8853	7.7853	7.1597	7.3721	8.715	8.8052
217028_at	CXCR4	13.9599	13.9069	13.8291	14.1974	14.4012	14.0621	14.0621	14.2589	14.2486	14.285	13.6532	13.5558	12.5566	12.7895	13.2291	12.9184	13.4467	13.149
217979_at	TSPAN13	10.8808	10.7526	10.5987	10.9598	11.2736	11.2315	10.8823	10.9438	11.4691	11.315	9.9783	10.4057	9.2279	9.4081	9.5113	9.9289	10.2911	9.751
218280_x_at	HIST2H2AA3//HIST2H2AA4	8.6616	8.5615	8.9601	7.4138	8.3355	7.3699	7.7101	8.0249	8.5383	7.8324	6.8619	6.6715	7.0181	6.1678	6.2197	6.1327	6.4616	6.5291
218346_s_at	SESN1	8.569	8.4904	7.9435	9.5521	9.9637	7.9675	7.3219	8.6014	8.9905	9.2982	6.7639	7.6027	5.2699	5.3255	6.164	6.2037	7.7535	5.5346
219077_s_at	WWOX	6.5838	6.6979	5.1583	6.421	5.3634	6.3869	6.5798	5.9459	6.8848	6.0211	5.1093	4.6659	4.8824	5.2644	4.8059	4.3791	4.4832	4.553
219737_s_at	PCDH9	7.7024	7.7964	9.6908	9.2304	9.4327	8.2009	7.2851	7.95	9.1968	7.9749	5.9006	6.1864	5.2834	5.0121	4.6611	4.8735	5.6635	3.925
221234_s_at	BACH2	7.9514	8.0597	7.6134	8.8422	9.0562	8.133	7.6308	8.667	9.2612	8.7349	7.3237	7.567	6.1397	5.8129	5.8662	5.934	7.4554	5.4115
221658_s_at	IL21R	5.9995	6.8703	5.4035	5.8098	6.4776	5.8098	6.0243	6.5184	7.2685	6.897	7.0985	6.3248	3.9747	3.9959	4.7292	4.8312	5.5974	3.5751
222285_at	IGHD	8.9268	8.8457	11.4623	9.7049	9.3068	9.4456	8.9755	9.4346	10.3239	9.6821	8.502	8.4759	6.5105	5.0908	6.6092	6.6092	7.8408	4.1801
39318_at	TCL1A	11.2384	11.211	11.6136	11.6073	12.3388	12.0903	12.3437	12.0471	12.547	12.5268	9.6125	9.9425	5.6959	4.2868	5.3717	4.8152	7.6647	4.1624
200872_at	S100A10	10.0954	10.1922	9.8006	8.7747	9.462	8.916	8.4854	9.9652	9.2867	8.9004	9.841	9.7106	12.2449	11.9882	11.1873	10.9453	10.3198	10.4285
201028_s_at	CD99	6.8065	7.3912	6.9481	6.3259	6.3651	4.7368	6.3651	6.3651	7.8756	7.3037	7.9011	7.8872	9.3779	9.3313	8.0562	8.49	7.9589	8.7274
201105_at	LGALS1	6.9555	6.8541	6.2481	5.1983	5.3361	5.345	4.5161	5.8517	5.7423	4.3111	6.2695	5.3188	10.7576	9.5847	9.6659	8.9974	8.0509	8.3543

Probe ID	GENE_SYMBOL	Peripheral naïve B cells										Splenic naïve B cells		Peripheral memory B cells				Splenic memory B cells	
		GSM32 2401	GSM32 2402	GSM32 2403	GSM56 5308	GSM56 5309	GSM56 5310	GSM56 5311	GSM56 5312	GSM56 5313	GSM56 5314	GSM33 8401	GSM33 8402	GSM56 5315	GSM56 5316	GSM56 5317	GSM56 5318	GSM33 8405	GSM33 8406
201462_at	SCRN1	6.6899	6.9864	6.0732	5.9844	5.9844	5.9844	5.9844	6.0672	6.5854	6.0672	6.1187	6.5832	8.6709	7.6725	7.7457	8.5448	7.3641	7.9781
201590_x_at	ANXA2	8.8673	8.9636	8.3525	7.0045	7.5838	7.0841	7.2568	8.3915	7.6975	7.6332	6.9348	7.8761	11.5531	10.9681	9.9759	10.4477	9.06	9.4991
201669_s_at	MARCKS	8.6882	8.7232	7.8508	6.7306	7.2255	6.9377	6.4568	8.1886	8.8963	8.2611	8.9776	8.6209	10.5079	10.56	10.5504	9.6831	9.3583	9.4788
201761_at	MTHFD2	4.6112	4.9839	4.6392	5.337	5.2209	5.621	5.1973	5.3985	5.1689	4.8787	6.2791	7.3203	7.6629	6.6362	6.2374	5.8143	6.9757	7.3478
201858_s_at	SRGN	7.2906	7.1362	5.7325	6.4467	6.6846	4.7291	4.7597	7.0467	7.3219	4.6926	7.3131	8.5831	10.5496	9.6392	8.6792	7.9626	8.1739	9.8818
201859_at	SRGN	8.8913	8.751	8.4521	8.7429	8.1777	7.7881	7.3898	9.2223	8.8741	7.5051	9.5384	10.5028	11.7739	11.078	10.2925	9.134	10.0768	11.1168
202393_s_at	KLF10	3.8425	3.7613	4.304	4.6293	3.5084	3.4403	3.2949	4.8449	4.1045	2.8312	6.6752	7.6328	8.272	7.0342	6.965	6.603	6.1913	7.7429
202503_s_at	KIAA0101	3.3447	3.046	4.3803	3.9629	3.2546	3.9629	4.5167	4.0913	2.6231	3.9305	5.3135	6.8785	8.246	6.4982	5.6563	4.4893	5.5491	6.2549
202589_at	TYMS	2.2458	2.2458	2.5298	2.2036	2.203	2.203	2.2036	2.203	2.1094	2.203	3.8205	5.3514	7.303	5.3123	2.6796	2.6796	3.4364	4.8549
202910_s_at	CD97	4.109	4.109	4.109	4.1143	4.623	4.5039	3.5996	4.623	4.9962	4.0474	5.0779	5.1763	6.2243	6.1581	5.286	5.0411	5.6455	6.7193
203186_s_at	S100A4	8.0258	8.1333	8.0103	6.4028	6.9875	6.6174	5.1843	7.3006	8.1548	5.0415	8.1725	8.2214	10.4319	9.6596	10.4363	9.9744	8.4644	8.6006
203554_x_at	PTTG1	3.6109	3.946	4.8192	4.3314	4.3314	5.1553	4.3942	5.0819	3.4494	4.3314	5.2331	6.1651	7.181	6.4497	5.5046	5.4988	5.9992	6.836
204401_at	KCNN4	6.466	6.597	5.3375	5.5918	5.9778	5.1196	5.1196	5.3485	5.9869	5.1196	6.4165	5.6202	8.1701	8.0463	8.1496	7.9044	7.2574	7.4627
204529_s_at	TOX	2.5025	2.3009	2.3409	3.6326	3.2526	3.6326	4.1303	3.2765	2.4315	3.2526	3.1556	3.2256	6.4944	6.5927	4.1713	5.9732	5.4744	7.8075
204638_at	ACP5	7.0326	6.1764	4.8751	5.7439	6.1022	4.8789	5.7439	5.9359	6.4738	4.8789	7.0444	8.63	9.0324	9.0177	8.436	7.6595	7.7625	8.8402
204780_s_at	FAS	4.4132	4.3915	4.329	5.1359	4.0367	4.5016	4.0773	4.3843	3.9663	4.3628	4.4812	4.5426	6.0266	7.0532	5.6501	5.1779	5.4026	6.2222
204781_s_at	FAS	2.5887	2.5801	2.5699	2.1685	2.1685	2.1685	3.0144	2.1685	2.0745	2.105	3.0905	3.1074	3.3589	4.3596	3.9139	3.3334	3.1011	3.2352

Probe ID	GENE_SYMBOL	Peripheral naïve B cells										Splenic naïve B cells		Peripheral memory B cells				Splenic memory B cells	
		GSM32 2401	GSM32 2402	GSM32 2403	GSM56 5308	GSM56 5309	GSM56 5310	GSM56 5311	GSM56 5312	GSM56 5313	GSM56 5314	GSM33 8401	GSM33 8402	GSM56 5315	GSM56 5316	GSM56 5317	GSM56 5318	GSM33 8405	GSM33 8406
204959_at	MNDA	6.4142	7.0732	5.7654	5.3968	4.1378	4.5861	6.1822	6.2495	6.025	3.9931	4.7379	3.8525	7.5926	6.7943	7.7643	7.9898	6.1502	7.0379
204963_at	SSPN	1.9712	2.1346	2.3876	2.7581	2.6116	2.7581	2.7581	2.7683	2.5292	2.753	2.0708	2.2928	4.8401	4.2332	2.8895	4.1787	3.4529	5.5821
204964_s_at	SSPN	2.752	2.752	2.752	2.3092	2.3092	2.3092	2.3092	2.3092	2.3092	2.3092	2.9119	2.9138	4.5243	3.5415	4.2603	5.6308	3.2654	4.5999
205081_at	CRIP1	7.3405	7.6911	8.4192	6.1525	7.3204	5.017	4.5386	7.7599	7.6136	6.5206	9.2872	9.0797	11.0396	11.2965	10.5432	10.3669	9.029	9.1742
205173_x_at	CD58	6.3854	6.2681	4.4811	5.2047	5.5153	5.5153	4.5192	5.753	5.5156	5.2047	5.7988	6.5337	8.4735	7.8829	7.3892	6.8322	6.9607	7.7882
205229_s_at	COCH	3.463	3.4623	3.463	2.0995	2.0352	3.5565	3.574	2.1708	2.1768	2.3556	4.961	3.5981	8.8511	7.8226	8.2326	9.1437	6.8913	7.22
205269_at	LCP2	4.4958	4.0722	2.491	2.9891	3.0682	3.2816	3.6613	3.5986	3.403	3.5603	2.8559	2.4661	6.5487	5.1957	4.1377	4.8349	4.2938	5.5498
205412_at	ACAT1	6.6527	6.6223	5.9933	5.5475	5.4303	4.1233	5.1496	5.4982	6.5068	5.5189	4.9586	6.2036	8.0385	7.7143	6.8038	7.3306	6.4359	7.0652
205786_s_at	ITGAM	4.978	5.1513	4.338	4.3444	4.3444	4.1919	3.0438	4.3444	4.043	3.4251	5.462	4.7849	7.536	7.7757	7.0538	5.9027	5.6868	5.8279
206150_at	CD27	6.6137	6.52	4.2331	4.5669	4.8246	4.5669	4.6198	4.8246	4.5651	4.5651	7.3146	6.7567	10.6544	10.212	9.315	9.4358	8.3237	9.241
206385_s_at	ANK3	2.6735	2.6735	2.6735	2.339	2.339	2.339	2.339	2.339	2.2224	2.3004	2.926	2.622	5.4792	4.1883	5.6185	5.4538	4.1986	5.526
206472_s_at	TLE3	3.3695	3.3695	3.3695	3.6649	3.4599	3.3934	3.6621	4.3349	3.8076	3.6383	5.4478	4.0563	6.011	4.922	4.7506	4.7506	5.5304	5.6202
206513_at	AIM2	7.0333	6.9476	5.5399	5.733	5.733	4.3173	5.733	6.8368	5.733	4.3173	7.6078	6.7751	10.4845	10.2966	10.3409	10.4164	8.9585	9.3906
206584_at	LY96	4.6288	4.6288	3.6555	3.3149	3.72	3.3149	3.3149	5.2569	4.65	3.3149	6.0567	5.9324	7.6346	7.7357	6.9086	5.6288	6.3025	7.3561
206693_at	IL7	4.914	5.0789	6.6692	5.5497	6.1088	5.8632	4.2833	6.4785	6.9813	4.7314	6.1717	6.917	7.6176	7.4977	7.6854	7.83	7.0271	7.7857
206715_at	TFEC	5.4416	5.4723	4.969	4.2825	4.4623	4.9588	4.9151	4.4623	4.0624	4.4623	4.7127	3.5527	6.7086	5.6068	6.374	6.3799	6.0069	4.9277
207332_s_at	TFRC	8.5037	8.4599	8.3245	6.5101	7.3202	7.6114	7.1492	8.5824	8.88	7.9305	8.9455	9.3201	10.5474	10.4545	9.9557	9.82	9.2569	9.821
207571_x_at	C1orf38	4.629	4.629	4.5562	4.8875	5.7972	4.8148	3.5328	4.8047	4.5675	4.2292	5.9301	6.0034	7.0278	7.153	6.8702	6.6434	6.6579	8.0119
208683_at	CAPN2	8.6362	8.4433	7.9055	6.6433	7.6066	6.5094	6.6939	8.2018	8.1593	7.311	7.9162	7.7658	10.805	10.2799	9.8678	9.6653	8.9941	8.7427

Probe ID	GENE_SYMBOL	Peripheral naïve B cells										Splenic naïve B cells		Peripheral memory B cells				Splenic memory B cells	
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM338401	GSM338402	GSM565315	GSM565316	GSM565317	GSM565318	GSM338405	GSM338406
208687_x_at	HSPA8///LOC402143	11.4834	11.4333	10.8227	9.98	10.396	9.2305	10.2987	11.1515	11.4226	11.2314	11.5387	11.6961	12.7043	12.4541	12.2385	12.3447	11.6893	12.0582
208691_at	TFRC	9.2464	9.2714	8.2099	8.5966	8.8497	8.6455	7.4568	8.9123	9.455	8.2946	9.2723	10.2568	10.9225	10.8063	10.3807	10.5951	10.2357	10.4671
208699_x_at	TKT	7.0561	6.9489	6.2608	4.9719	6.3635	4.6889	6.3476	6.9341	7.0923	5.7712	7.7875	7.4019	9.2778	9.1147	8.175	7.9492	7.5326	8.2719
208864_s_at	TXN	7.4099	7.6947	6.4438	6.427	6.5972	6.6311	5.9012	6.8192	7.2828	5.85	7.6557	7.9657	10.0751	8.9892	8.9037	8.1061	8.1066	8.5955
208977_x_at	TUBB2C	5.9896	5.6661	5.4804	4.5093	4.9458	4.9387	5.4833	5.5789	7.0953	5.5789	7.864	8.0681	9.4682	8.3285	7.5635	7.0611	8.0965	8.2245
209205_s_at	LMO4	4.6559	4.433	4.5656	4.4878	4.3812	4.4878	4.2059	4.4878	5.0451	4.4851	4.9742	4.8656	6.5359	6.4847	5.8489	5.392	5.5776	6.5472
209610_s_at	SLC1A4	1.4529	1.4529	1.9705	2.4168	2.5997	2.5567	4.3962	2.5994	2.4168	2.5572	5.1153	4.7987	5.9683	3.9397	2.8555	2.826	3.7538	5.7635
209949_at	NCF2	2.0693	2.112	2.0693	2.566	2.5593	2.566	2.566	2.5732	2.566	2.5593	1.6885	2.2161	3.9942	4.7733	2.7	2.7	3.2383	4.8472
210338_s_at	HSPA8///LOC402143	10.6591	10.6212	10.4262	9.4264	9.7138	8.358	9.8758	10.2453	10.9823	10.7966	11.2223	11.4711	12.6394	12.2849	12.0108	12.2507	11.547	11.8398
210427_x_at	ANXA2	8.6724	8.7399	8.4319	7.5634	7.4121	6.8613	7.0923	8.1183	7.5564	7.6241	7.0921	7.8087	11.5046	10.5266	10.0266	10.2494	8.7693	9.6107
210785_s_at	C1orf38	5.8339	5.7453	4.2961	5.0217	6.2729	4.9923	4.9923	5.7635	5.0247	4.2368	6.7918	6.3587	7.649	7.7954	7.1016	6.4895	6.8802	8.2761
210895_s_at	CD86	4.3344	4.2446	4.0494	3.9351	4.1523	4.8226	4.7156	5.2685	4.7924	3.0693	4.8682	5.0192	7.3963	7.0622	6.65	6.3264	6.3588	7.6853
211430_s_at	IGH@///IGHG1///IGHG2///IGHG3///IGHM///IGHV4-31	7.0291	7.0853	10.3196	4.9661	9.6145	6.6277	7.8184	9.9003	8.6189	5.9542	12.3748	10.9643	13.6525	13.5045	12.9918	12.5798	12.2104	13.0924
211945_s_at	ITGB1	8.2553	8.2961	7.3101	6.4591	7.5244	6.7294	6.1118	8.1268	7.6685	5.719	8.6524	8.3414	10.9802	11.562	10.9719	10.9358	9.6843	10.0576
212124_at	ZMIZ1	5.0014	4.7285	3.7529	4.6295	4.8678	4.136	4.136	4.8815	4.9009	4.497	7.1972	7.1706	7.6982	7.7079	6.889	6.9877	7.277	8.3132

Probe ID	GENE_SYMBOL	Peripheral naïve B cells										Splenic naïve B cells		Peripheral memory B cells				Splenic memory B cells	
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM338401	GSM338402	GSM565315	GSM565316	GSM565317	GSM565318	GSM338405	GSM338406
212136_at	ATP2B4	3.2867	3.3531	3.2247	2.9425	2.7895	2.948	2.948	2.948	2.7215	2.948	4.1237	4.0214	5.8379	5.6577	4.1221	3.9619	4.1624	4.1624
212400_at	FAM102A	7.1455	7.4134	6.775	7.1685	6.9384	7.1079	7.5409	6.6575	6.995	7.2451	8.2045	7.5444	8.7096	8.8859	8.5106	8.3186	8.6641	8.7834
212533_at	WEE1	6.932	6.5941	7.6239	7.977	7.977	6.6828	6.9856	7.8891	6.7595	7.1747	7.973	8.5771	9.3835	9.7138	8.4478	8.2438	9.3768	9.219
212581_x_at	GAPDH	10.4379	10.3925	10.6278	9.7	10.2078	9.5967	10.0546	10.4865	10.4285	10.4285	11.7213	11.7164	12.9389	12.3656	11.8564	12.0432	11.7645	12.3553
212592_at	IGJ	9.687	9.5189	11.1971	8.6438	9.9998	9.2138	8.6323	7.6575	10.8858	9.8247	9.7218	9.9573	12.5019	12.1553	12.0529	11.8553	10.8988	10.5963
213083_at	SLC35D2	3.4558	3.4558	2.8034	3.0621	3.0621	3.0621	3.0621	3.0621	2.5047	3.2443	3.2944	2.9837	4.2327	4.317	4.8745	4.9463	3.8432	4.6985
213453_x_at	GAPDH	9.9453	10.0173	10.0319	9.012	9.7369	8.9882	9.4283	9.9003	9.9787	10.038	11.291	11.1308	12.6247	11.9575	11.3836	11.7121	11.4593	11.7978
213503_x_at	ANXA2	8.6558	8.7361	8.2366	7.5508	7.2652	7.5508	7.3038	8.2885	7.3807	7.6529	7.2904	7.9741	11.2517	10.3978	9.7378	10.1646	8.7584	9.5295
213564_x_at	LDHB	10.3919	10.5044	9.7055	9.0542	9.8237	9.0918	9.4645	10.2161	10.2446	9.663	10.5349	10.4684	11.8867	11.5652	11.2569	11.4299	11.0743	11.0549
213726_x_at	TUBB2C	6.6427	6.5341	6.6926	6.1306	6.7309	6.2491	6.6863	6.7309	7.4782	6.7309	8.3631	8.4515	9.5583	8.7726	8.3021	8.3789	8.9123	9.0707
214641_at	COL4A3	2.6643	2.4737	2.6714	2.1113	2.1113	2.2054	2.4655	2.1113	2.1069	2.1113	2.855	2.855	4.1691	4.9274	4.2933	5.192	3.4739	4.6662
215118_s_at	IGHA1	4.0822	4.4184	5.6624	2.8098	3.2275	3.0022	5.1136	2.8122	2.6781	2.8215	7.7821	4.3999	11.5045	11.2733	10.4217	9.0741	9.0558	9.1268
215711_s_at	WEE1	2.7519	2.7551	4.2598	3.6773	3.6773	3.2758	3.6773	3.9309	2.8862	3.6773	5.1759	4.9882	5.3084	5.9148	4.0264	5.4034	4.7591	5.5537
215719_x_at	FAS	2.6668	2.6668	2.5035	2.0674	2.0674	2.5665	2.1167	2.0674	2.0674	2.126	3.1342	3.033	4.4794	4.4118	4.5972	2.9853	3.2082	3.5091
216060_s_at	DAAM1	4.2587	4.322	2.9549	2.8311	3.5544	2.8655	2.9794	2.9567	3.7928	2.9062	3.6745	3.1173	6.8113	6.4208	5.6777	6.6106	5.4357	5.7314
216250_s_at	LPXN	7.722	7.527	7.4153	6.4467	7.6979	7.5024	7.0934	8.0786	7.8125	7.5333	8.7686	8.4715	9.2652	9.2558	8.7483	8.8319	8.9936	9.2755
217022_s_at	IGHA1///IGHA2	5.4483	5.5232	9.8559	3.5195	7.0508	6.5914	8.0991	6.9444	5.0758	3.5195	11.1385	7.036	13.9029	13.6002	12.4438	11.5129	11.5806	11.4576

Probe ID	GENE_SYMBOL	Peripheral naive B cells										Splenic naive B cells		Peripheral memory B cells				Splenic memory B cells	
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM338401	GSM338402	GSM565315	GSM565316	GSM565317	GSM565318	GSM338405	GSM338406
217388_s_at	KYNU	7.5234	7.787	7.8625	7.1698	7.3519	6.4827	5.0839	7.3426	8.0312	6.5443	7.6875	8.3213	9.6624	9.239	8.7678	9.2776	8.1239	8.8078
217398_x_at	GAPDH	9.5717	9.7134	10.1695	8.9452	9.8867	8.8278	10.0411	9.9631	10.0364	10.0929	10.8109	11.1034	12.3989	11.7164	11.1869	11.3012	11.427	11.7996
217762_s_at	RAB31	6.7617	6.9843	5.3326	6.1628	5.1895	6.1379	6.1379	6.939	6.4942	6.1379	7.6955	6.084	8.9208	9.0832	8.1912	7.6075	7.9915	8.083
217763_s_at	RAB31	5.8072	5.726	4.5775	5.0811	4.863	5.071	5.0811	6.0742	5.6927	4.838	6.2352	5.5429	7.9973	7.8291	7.0445	7.3359	7.3748	7.279
217764_s_at	RAB31	5.7507	5.8837	3.6782	4.0665	3.5798	4.0625	3.9319	5.5237	5.9303	3.5691	6.654	5.9329	8.5244	8.545	7.8132	7.4972	7.7309	7.0783
217967_s_at	FAM129A	2.259	2.2446	2.1146	1.7861	1.8659	1.8531	1.8732	1.8732	1.8732	1.8618	4.1236	4.1014	6.0884	6.0781	4.1266	3.8012	4.1208	4.1523
218546_at	C1orf115	1.6187	1.6427	2.2196	2.6334	2.6334	2.6866	2.7184	2.5645	2.557	2.557	4.1252	3.7886	4.3154	3.5207	2.7528	4.237	4.4418	4.6256
218935_at	EHD3	3.4344	4.0337	2.6915	2.9418	2.9418	2.852	3.7996	3.5236	3.1881	3.5236	3.5049	4.9059	6.7204	6.4972	5.5568	5.1134	5.6041	6.328
219049_at	ChGn	9.2014	9.3549	8.5627	6.8488	8.4911	6.2813	5.6682	8.3243	8.4706	7.4981	6.6175	7.7495	9.6541	10.2256	10.081	10.1389	8.2658	7.7294
219313_at	GRAMD1C	2.4994	2.4994	2.4439	2.0654	2.0654	2.0654	2.0654	2.0654	2.0654	2.0654	2.9817	2.8148	5.0466	4.3191	4.013	3.6239	3.1755	4.1201
220330_s_at	SAMSN1	5.3731	5.3834	4.3565	6.2777	5.1732	5.1989	5.1996	5.0333	5.1237	4.4808	6.4788	7.4973	8.2542	7.2062	7.946	7.2541	7.5174	8.5153
220948_s_at	ATP1A1	6.6565	6.8442	6.0178	6.0395	6.0395	5.6697	6.0395	6.2543	6.5913	6.0395	7.0741	7.0872	8.614	8.0459	7.9426	7.8958	7.5753	8.4621
221268_s_at	SGPP1	5.8834	5.8843	4.7098	4.6881	4.6945	4.8224	5.0557	6.0408	5.4165	4.4081	5.5086	6.8427	7.9198	7.9923	7.2269	7.3535	6.6469	7.6787
221891_x_at	HSPA8///LOC402143	11.5832	11.6648	11.2726	10.868	11.2267	10.797	10.7087	11.4231	11.7124	11.1611	12.2798	12.0291	12.905	12.5869	12.5694	12.5624	12.3039	12.3573
222073_at	COL4A3	2.9196	2.972	3.2489	2.2692	2.2677	2.2692	2.2692	2.8085	1.8217	2.0654	3.6516	3.6516	7.3132	7.498	7.2663	8.4452	5.5654	7.4347
39248_at	AQP3	2.6509	2.6509	2.7344	1.8591	1.8591	1.8591	1.8591	1.8591	1.8591	1.8591	3.3942	3.3942	6.799	4.4754	4.0627	3.1613	3.3764	3.3876
AFFX-HUMGAPDH/M3	NA	10.5172	10.5204	10.5998	9.9239	10.536	9.8652	10.1159	10.5798	10.6473	10.335	12.0045	11.2458	12.8427	12.2818	11.8906	11.904	12.2059	12.0119

Probe ID	GENE_SYMBOL	Peripheral naïve B cells										Splenic naïve B cells		Peripheral memory B cells				Splenic memory B cells	
		GSM322401	GSM322402	GSM322403	GSM565308	GSM565309	GSM565310	GSM565311	GSM565312	GSM565313	GSM565314	GSM338401	GSM338402	GSM565315	GSM565316	GSM565317	GSM565318	GSM338405	GSM338406
3197_3_at																			
AFFX-HUMGAPDH/M33197_5_at	NA	9.4342	9.32	8.9765	8.6318	9.2455	7.659	9.3101	9.2731	9.6682	9.342	10.7603	10.6145	12.1772	11.6266	11.1485	11.2608	11.1192	11.5422
AFFX-HUMGAPDH/M33197_M_at	NA	9.1277	9.2266	8.9875	8.2677	8.8823	7.6965	8.592	8.6298	9.4119	9.0762	10.6665	10.2926	12.1045	11.2003	10.8475	11.1157	10.9408	11.0062