Additional file 2

Non-coding Class Switch Recombination-related transcription in human normal and pathological immune responses

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Table S1: Selected SRA projects used to map IH boundaries

SRA Study	Samples	Cell type	Study	Ref.
SRP020491				
	SRR805725	Circulating B cells (pre-vaccine)	Changes in gene expression profiles of circulating B cells after influenza vaccination in healthy human subjects	Henn AD, 2013 [15]
	SRR805736	Circulating B cells (pre-vaccine)		
	SRR805747	Circulating B cells (pre-vaccine)		
	SRR805758	Circulating B cells (pre-vaccine)		
	SRR805769	Circulating B cells (pre-vaccine)		
SRP021509				
	SRR834979	Tonsillar naive B cells	EZH2 is required for germinal center formation and somatic EZH2 mutations promote lymphoid transformation	Béguelin W, 2013 [16]
	SRR834980	Tonsillar naive B cells		
	SRR834981	Tonsillar naive B cells		
	SRR834982	Tonsillar naive B cells		
	SRR834983	Tonsillar Germinal Center B cells		
	SRR834984	Tonsillar Germinal Center B cells		
	SRR834985	Tonsillar Germinal Center B cells		
	SRR834986	Tonsillar Germinal Center B cells		
SRP033335				
	SRR1038580	Control CD19+ B cells	Genome-wide expression profiling of B Lymphocytes reveals IL4R increase in allergic asthma	Pascual M, 2014 [17]
	SRR1038581	Control CD19+ B cells		
	SRR1038582	Control CD19+ B cells		
SRP045500				
	SRR1550988	Healthy control B cells	Next generation sequencing of human immune cell subsets across diseases	Linsley PS, 2014 [18]
	SRR1551042	Healthy control B cells		
	SRR1551049	Healthy control B cells		
	SRR1551070	Healthy control B cells		
SRP048820				
	SRR1609989	Centrocyte	Enhancer Sequence Variants and Transcription Factor Deregulation Synergize to Construct Pathogenic Regulatory Circuits in B Cell Lymphoma	Koues OI et al., 2014 [19]
	SRR1609990	Centrocyte		
	SRR1609991	PB Activated B cells		
	SRR1609992	PB Activated B cells		

SRP051688				
	SRR1740034	Primary B cells (pre-vaccine)	A Cell-based Systems Biology Assessment of Human Blood to Monitor Immune Responses After Influenza Vaccination	Hoek KL, 2013 [20]
	SRR1740062	Primary B cells (pre-vaccine)		
SRP055390				
	SRR1812749	Normal CD19+/CD27+ memory B-cells	Transcriptome analysis in chronic lymphocytic leukemia cells using RNA sequencing (RNA-seq)	Kushwaha G, 2016 [21]
	SRR1812750	Normal CD19+/ IgD+ naive B-cells		
	SRR1812751	Normal CD19+ B-cells		
	SRR1812752	Normal CD19+ B-cells		
	SRR1812753	Normal CD19+ B-cells		
SRP060715				
	SRR2097512	Purified normal B cells	Gene expression and splicing alterations analyzed by high throughput RNA sequencing of chronic lymphocytic leukemia specimens	Unpublished
	SRR2097513	Purified normal B cells		
	SRR2097514	Purified normal B cells		
	SRR2097515	Purified normal B cells		
	SRR2097516	Purified normal B cells		

*Data shown as it is displayed for each of the projects in the SRA

Table S2. CSRnc transcription in cancer cell lines

	Samples with High_expression	Samples with low/no expression	p_val*	fdr**	
Acute lymphocytic leukemia	6	111	0.4732	0.6310	
Acute monocytic leukemia	12	142	0.7540	0.9280	
Acute myeloid leukemia	**2**	**185**	**0.0002**	**0.0003**	*
Prostate cancer	13	319	0.0129	0.0206	
Pancreatic cancer	0	58	0.0207	0.0301	
Colorectal cancer	**9**	**580**	**0.0000**	**0.0000**	*
Breast cancer	**32**	**1417**	**0.0000**	**0.0000**	*
Lung cancer	**0**	**462**	**0.0000**	**0.0000**	*
Gastric cancer	3	46	1.0000	1.0000	
Adrenal cancer	0	3	1.0000	1.0000	
B cell lymphoma	**77**	**38**	**0.0000**	**0.0000**	*
Astrocytoma	**1**	**534**	**0.0000**	**0.0000**	*
Cervical cancer	**7**	**1613**	**0.0000**	**0.0000**	*
Chronic myeloid leukemia	**8**	**522**	**0.0000**	**0.0000**	*
Osteosarcoma	**3**	**159**	**0.0034**	**0.0060**	*
Cholangiosarcoma	0	7	1.0000	1.0000	

* Exact Fisher's test. **Enriched. Depleted**

** Benjamini-Hochberg post hoc correction for multiple comparisons.

Table S3. Differential expression analysis in I_H and C_H

				coding									p-value *						non coding			
Project_ID	Description	Comparisson	Sample type	Cμ	Cδ	Cγ3	Cγ1	Cα1	Cγ2	Cγ4	Cε	Cα2	Iμ	Iδ	Iγ3	Iγ1	Iα1.1	Iα1.2	Iγ2	Iγ4	Iε	Iα2
SRP032775	Malaria	Post-infection vs Pre-infection	Whole blood	1.00	**0.01**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.14	0.15	**0.05**	1.00	1.00	0.16	1.00	1.00	1.00
SRP033696	Influenza	H7N9 infection vs healthy controls	Whole blood	**0.00**	1.00	0.23	0.38	**0.00**	**0.00**	**0.04**	1.00	0.05	1.00	1.00	0.49	**0.02**	1.00	**0.00**	0.47	1.00	1.00	1.00
SRP059039	Pediatric diarrhea	*Shigella* vs Control	Whole blood	0.98	**0.03**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**0.03**	0.74	0.13	**0.01**	1.00	0.89	0.51	**0.03**	1.00	1.00
SRP059039	Pediatric diarrhea	*Salmonella* vs Control	Whole blood	1.00	1.00	1.00	1.00	1.00	0.55	1.00	1.00	1.00	1.00	1.00	**0.03**	0.08	1.00	1.00	**0.05**	0.25	1.00	1.00
SRP059039	Pediatric diarrhea	Rotavirus vs Control	Whole blood	1.00	0.53	1.00	1.00	1.00	0.42	1.00	1.00	1.00	1.00	1.00	1.00	0.43	1.00	1.00	0.05	0.36	1.00	1.00
SRP059172	Brucellosis/Leishmaniasis infection	*Brucella* vs Control	Whole blood	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.42	**0.00**	1.00	1.00	1.00	0.72	0.61	1.00	0.35	1.00
SRP059172	Brucellosis/Leishmaniasis infection	*Leishmania* vs Control	Whole blood	1.00	**0.00**	0.07	**0.01**	0.76	0.57	0.05	1.00	0.34	1.00	1.00	0.20	0.47	1.00	1.00	**0.01**	1.00	0.48	1.00
SRP042228	Pediatric Crohn	Crohn's disease (iCD) vs Not-IBD	Ileal biopsy	**0.00**	1.00	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	1.00	**0.00**	**0.00**	**0.03**	1.00	1.00	**0.01**	0.54	0.91	1.00	1.00	**0.02**
SRP042228	Pediatric Crohn	Crohn's disease (cCD) vs Not-IBD	Ileal biopsy	0.32	1.00	0.14	0.14	0.07	**0.02**	**0.02**	1.00	**0.04**	0.14	0.28	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRP042228	Pediatric Crohn	Ulcerative colitis vs Not-IBD	Ileal biopsy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86
SRP051688	Influenza	Post-immune(day 7) vs preimmune	B cells	1.00	1.00	1.00	0.07	1.00	1.00	1.00	1.00	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRP020491	Influenza	Post-immune(day 7) vs preimmune	PBMC	1.00	1.00	1.00	0.27	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRP062966	Systemic Lupus Erythematosus (SLE)	SLE patients vs healthy control	Whole blood	1.00	1.00	0.99	0.56	0.19	1.00	1.00	1.00	0.31	0.93	0.82	1.00	1.00	1.00	1.00	0.39	1.00	0.48	0.77

* p- value adjusted by Bonferroni. Values in green represent a significant decrease of expression compared to control. Values in red represent a significant increase of expression compared to control.