

Supplementary Table I.

A. P5 isotype targeting primers (forward read)	
Primer name	Primer sequence
IgM	ACACTCTTTCCCTACACGACGCTCTTCCGATCTNNNN+barcode+GGGAATTCTCACAGGAGACG
IgD	ACACTCTTTCCCTACACGACGCTCTTCCGATCTNNNN+barcode+CCCTGATATGATGGGGAACA
IgG	ACACTCTTTCCCTACACGACGCTCTTCCGATCTNNNN+barcode+CAGGCAGCCCAGGGC
IgA	ACACTCTTTCCCTACACGACGCTCTTCCGATCTNNNN+barcode+AGCCCTGGACCAGGCA
IgE	ACACTCTTTCCCTACACGACGCTCTTCCGATCTNNNN+barcode+GAAGACGGATGGGCTCTGT

B. P7 variable gene targeting primers (reverse read)

Primer name	Primer sequence
VH1	GGCATTCTGCTGAACCGCTCTCCGATCT+barcode+GGCCTCAGTGAAGGTCTCCTGCAAG
VH2	GGCATTCTGCTGAACCGCTCTCCGATCT+barcode+GTCTGGTCTACGCTGGTCAAACCC
VH3	GGCATTCTGCTGAACCGCTCTCCGATCT+barcode+CTGGGGGTCCCTGAGACTCTCCTG
VH4	GGCATTCTGCTGAACCGCTCTCCGATCT+barcode+CTTCGGAGACCCTGTCCCTCACCTG
VH5	GGCATTCTGCTGAACCGCTCTCCGATCT+barcode+CGGGGAGTCTCTGAAGATCTCCTGT
VH6	GGCATTCTGCTGAACCGCTCTCCGATCT+barcode+TCGCAGACCCTCTCACTCACCTGTG

C. Second stage PCR primers	
Primer name	Primer sequence
P5_2nd_PCR	AATGATACGGCGACCACCGAGATCTACACTCTTTCCCTACACGA
P7_2nd_PCR	CAAGCAGAAGACGGCATACGAGATCGGTCTCGGCATTCTGCTGAACCGCTC

D. Barcode designations for sample amplifications				
Participant identifier	Amplification number	P5 barcode	P7 barcode	Sequencing library
BFI-0000372	1	TGTGAGCG	GATCGAGC	1
BFI-0000372	2	CACGCACT	CATGTCAT	1
BFI-0000372	3	GATCGAGC	TGTGAGCG	1
BFI-0000372	4	TCGTCGTC	TCGTCGTC	1
BFI-0000372	5	ACGTAACG	ACGTAACG	1
BFI-0000372	6	ATGATACA	CTATAGAG	1
BFI-0000373	7	GCGCATGC	GATCGAGC	1
BFI-0000373	8	TGTGAGCG	CATGTCAT	1
BFI-0000373	9	ATGATACA	GCGCATGC	1
BFI-0000373	10	CGTATGCA	TCGTCGTC	1
BFI-0000373	11	ACGTCGTA	ACGTCGTA	1
BFI-0000373	12	CATGTCAT	CTATAGAG	1
BFI-0000374	13	ACACGACG	GATCGAGC	1
BFI-0000374	14	GCGCATGC	CATGTCAT	1
BFI-0000374	15	CATGTCAT	GCGCATGC	1
BFI-0000374	16	CGAGCAGA	TCGTCGTC	1
BFI-0000374	17	ACGAGACG	ACGAGACG	1
BFI-0000374	18	CACGCACT	CTATAGAG	1
BFI-0000375	19	TCGTCGTC	GATCGAGC	1
BFI-0000375	20	CACGCACT	GCGCATGC	1
BFI-0000375	21	GATCGAGC	TCGTCGTC	1
BFI-0000375	22	TGTGAGCG	CTATAGAG	1
BFI-0000376	23	CGTATGCA	GATCGAGC	1
BFI-0000376	24	TCGTCGTC	CATGTCAT	1
BFI-0000376	25	TGTGAGCG	GCGCATGC	1
BFI-0000376	26	ATGATACA	CGTATGCA	1
BFI-0000376	27	GCGCATGC	CTATAGAG	1
BFI-0000376	28	CGCATCGT	CGCATCGT	1
BFI-0000377	29	CGAGCAGA	GATCGAGC	1
BFI-0000377	30	GCGCATGC	GCGCATGC	1
BFI-0000377	31	CATGTCAT	CGTATGCA	1
BFI-0000377	32	ACACGACG	CTATAGAG	1
BFI-0000377	33	CGAACTAC	CGAACTAC	1
BFI-0000378	34	ATGATACA	ATGATACA	1
BFI-0000378	35	GATCGAGC	GATCGAGC	1
BFI-0000378	36	CGAGCAGA	CATGTCAT	1
BFI-0000378	37	ACACGACG	GCGCATGC	1
BFI-0000378	38	CACGCACT	CGTATGCA	1
BFI-0000379	39	ATGATACA	GCATGCAC	1
BFI-0000379	40	GATCGAGC	CATGTCAT	1

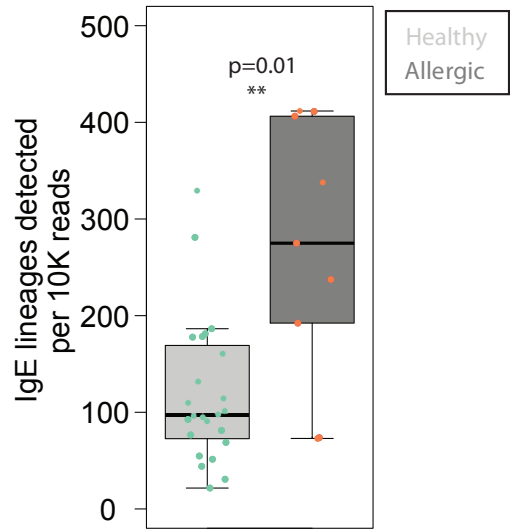
BFI-0000379	41	TCGTCGTC	GCGCATGC	1
BFI-0000379	42	TGTGAGCG	CGTATGCA	1
BFI-0000379	43	CGTATGCA	CTATAGAG	1
BFI-0000380	44	CACGCACT	ATGATACA	1
BFI-0000380	45	CATGTCAT	GCATGCAC	1
BFI-0000380	46	ATGATACA	CACGCACT	1
BFI-0000380	47	CGAGCAGA	CTATAGAG	1
BFI-0000381	48	CACGCACT	GCATGCAC	1
BFI-0000381	49	CATGTCAT	CACGCACT	1
BFI-0000381	50	CGAGCAGA	GCGCATGC	1
BFI-0000381	51	ACACGACG	CGTATGCA	1
BFI-0000381	52	GATCGAGC	CTATAGAG	1
BFI-0000381	53	CGAAGCGT	CGAAGCGT	1
BFI-0000382	54	TGTGAGCG	GCATGCAC	1
BFI-0000382	55	TCGTCGTC	CGTATGCA	1
BFI-0000382	56	ATGATACA	AGTATCTG	1
BFI-0000382	57	CTCCACGT	CTCCACGT	1
BFI-0000383	58	GCGCATGC	GCATGCAC	1
BFI-0000383	59	TGTGAGCG	CACGCACT	1
BFI-0000383	60	ATGATACA	ACACGACG	1
BFI-0000383	61	CGTATGCA	CGTATGCA	1
BFI-0000383	62	CATGTCAT	AGTATCTG	1
BFI-0000384	63	GCGCATGC	CACGCACT	1
BFI-0000384	64	CATGTCAT	ACACGACG	1
BFI-0000384	65	CGAGCAGA	CGTATGCA	1
BFI-0000384	66	CACGCACT	AGTATCTG	1
BFI-0000384	67	GTGTAACG	GTGTAACG	1
BFI-0000385	68	TGTGAGCG	ATGATACA	1
BFI-0000385	69	TCGTCGTC	GCATGCAC	1
BFI-0000385	70	ACACGACG	CACGCACT	1
BFI-0000385	71	TGTGAGCG	AGTATCTG	1
BFI-0000386	72	CGTATGCA	GCATGCAC	1
BFI-0000386	73	TCGTCGTC	CACGCACT	1
BFI-0000386	74	TGTGAGCG	ACACGACG	1
BFI-0000386	75	ATGATACA	CGAGCAGA	1
BFI-0000386	76	GCGCATGC	AGTATCTG	1
BFI-0000386	77	GTTTCGTA	GTTTCGTA	1
BFI-0000387	78	CGAGCAGA	GCATGCAC	1
BFI-0000387	79	CATGTCAT	CGAGCAGA	1
BFI-0000387	80	ACACGACG	AGTATCTG	1
BFI-0000387	81	GATGTGTA	GATGTGTA	1
BFI-0000388	82	GATCGAGC	GCATGCAC	1
BFI-0000388	83	CGAGCAGA	CACGCACT	1

BFI-0000388	84	ACACGACG	ACACGACG	1
BFI-0000388	85	CACGCACT	CGAGCAGA	1
BFI-0000388	86	TCGTCGTC	AGTATCTG	1
BFI-0000389	87	ATGATACA	TACGATGC	1
BFI-0000389	88	GATCGAGC	CACGCACT	1
BFI-0000389	89	TCGTCGTC	ACACGACG	1
BFI-0000389	90	TGTGAGCG	CGAGCAGA	1
BFI-0000389	91	CGTATGCA	AGTATCTG	1
BFI-0000390	92	ACACGACG	ATGATACA	1
BFI-0000390	93	CATGTCAT	TACGATGC	1
BFI-0000390	94	ATGATACA	TGTGAGCG	1
BFI-0000390	95	CGAGCAGA	AGTATCTG	1
BFI-0000391	96	TCGTCGTC	ATGATACA	1
BFI-0000391	97	CACGCACT	TACGATGC	1
BFI-0000391	98	CATGTCAT	TGTGAGCG	1
BFI-0000391	99	CGAGCAGA	ACACGACG	1
BFI-0000391	100	ACACGACG	CGAGCAGA	1
BFI-0000391	101	GATCGAGC	AGTATCTG	1
BFI-0000392	102	TGTGAGCG	TACGATGC	1
BFI-0000392	103	CACGCACT	TGTGAGCG	1
BFI-0000392	104	GATCGAGC	ACACGACG	1
BFI-0000392	105	TCGTCGTC	CGAGCAGA	1
BFI-0000392	106	ATGATACA	GAGTCATA	1
BFI-0000392	107	TAATGCGT	TAATGCGT	1
BFI-0000393	108	GCGCATGC	TACGATGC	1
BFI-0000393	109	TGTGAGCG	TGTGAGCG	1
BFI-0000393	110	ATGATACA	TCGTCGTC	1
BFI-0000393	111	CGTATGCA	CGAGCAGA	1
BFI-0000393	112	CATGTCAT	GAGTCATA	1
BFI-0000394	113	CATGTCAT	TCGTCGTC	1
BFI-0000394	114	CGAGCAGA	CGAGCAGA	1
BFI-0000394	115	CACGCACT	GAGTCATA	1
BFI-0000394	116	CGTATGCA	GAGTCATA	1
BFI-0000394*	117	CGTATGCA	ATGATACA	1
BFI-0000394*	118	GCGCATGC	TGTGAGCG	1
BFI-0000395	119	CGAGCAGA	ATGATACA	1
BFI-0000395	120	TCGTCGTC	TACGATGC	1
BFI-0000395	121	GATCGAGC	CGAGCAGA	1
BFI-0000395	122	TGTGAGCG	GAGTCATA	1
BFI-0000396	123	GATCGAGC	ATGATACA	1
BFI-0000396	124	ATGATACA	GATCGAGC	1
BFI-0000396	125	CGTATGCA	TACGATGC	1
BFI-0000396	126	TCGTCGTC	TGTGAGCG	1

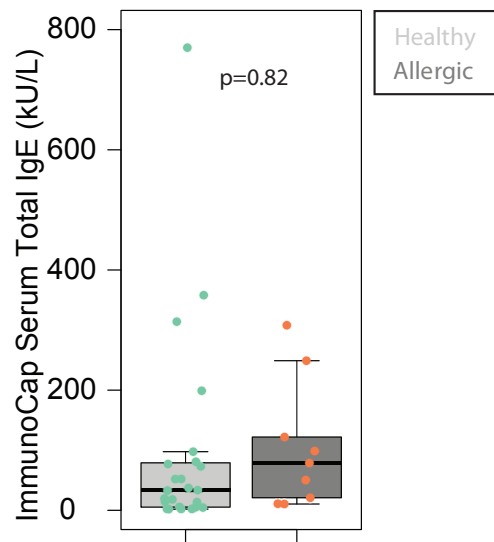
BFI-0000396	127	TGTGAGCG	TCGTCGTC	1
BFI-0000396	128	GCGCATGC	GAGTCATA	1
BFI-0000397	129	ATGATACA	CATGTCAT	1
BFI-0000397	130	CGTATGCA	TGTGAGCG	1
BFI-0000397	131	GCGCATGC	TCGTCGTC	1
BFI-0000397	132	ACACGACG	GAGTCATA	1
BFI-0000398	133	CACGCACT	GATCGAGC	1
BFI-0000398	134	GATCGAGC	TACGATGC	1
BFI-0000398	135	CATGTCAT	CATGTCAT	1
BFI-0000398	136	CGAGCAGA	TGTGAGCG	1
BFI-0000398	137	ACACGACG	TCGTCGTC	1
BFI-0000398	138	TCGTCGTC	GAGTCATA	1
BFI-0000821	139	CGAGCAGA	ACACGACG	2
BFI-0001755	140	CGTATGCA	ACACGACG	2
BFI-0002450	141	CGAGCAGA	CATGTCAT	2
BFI-0002451	142	ATGATACA	CACGCACT	2
BFI-0002452	143	GCATGCAC	CATGTCAT	2
BFI-0002453	144	TACGATGC	CATGTCAT	2

\*Note: A poor sample amplification for BFI-0000394 was repeated using a different barcode pair.

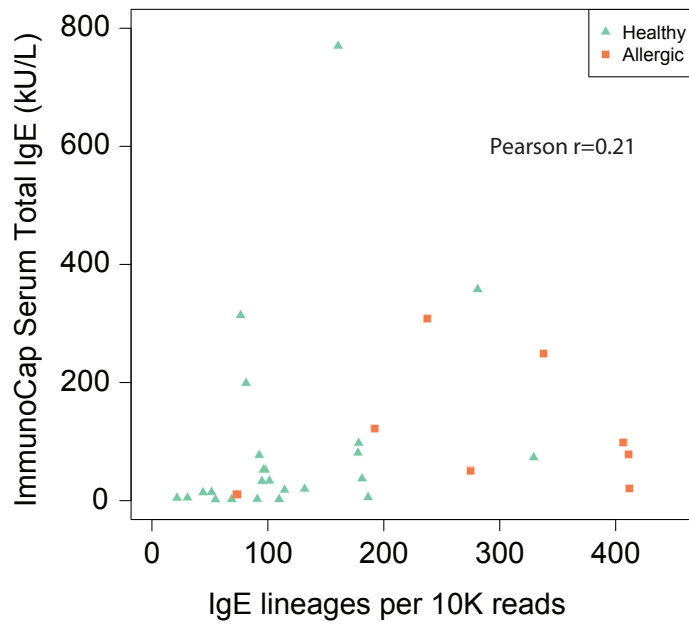
### S1A



### S1B



### S1C





# S2

1	1	4	10	5	6	0	1	BFI-0000372
0	1	3	7	3	3	3	1	BFI-0000374
1	0	0	4	1	1	1	0	BFI-0000376
6	3	8	14	17	8	2	0	BFI-0000377
1	3	0	5	4	2	0	1	BFI-0000378
1	1	0	1	1	1	0	0	BFI-0000379
0	1	3	10	4	1	2	1	BFI-0000380
0	0	0	0	0	1	0	0	BFI-0000381
1	0	0	2	2	2	0	0	BFI-0000382
1	2	1	6	1	4	0	1	BFI-0000383
1	0	1	2	3	2	2	0	BFI-0000384
1	0	1	8	5	1	3	1	BFI-0000385
0	0	1	3	1	1	0	1	BFI-0000387
3	0	0	8	1	3	1	0	BFI-0000388
0	0	0	3	0	0	0	0	BFI-0000393
3	5	2	6	3	2	0	1	BFI-0000394
0	0	0	2	0	2	0	2	BFI-0000396
0	1	0	27	4	2	0	1	BFI-0000397
11	5	1	13	4	10	2	5	BFI-0000398
1	0	2	10	8	1	2	0	BFI-0000821
0	0	3	3	3	1	1	1	BFI-0002450
0	0	0	1	0	0	1	0	BFI-0002451
1	0	0	3	0	1	1	2	BFI-0002452
1	0	4	9	17	3	0	2	BFI-0002453
0	0	1	3	1	0	3	0	BFI-0000373
1	0	1	9	6	2	4	1	BFI-0000375
0	0	3	7	4	0	5	0	BFI-0000386
0	1	2	8	6	3	2	5	BFI-0000389
3	1	2	9	4	1	0	0	BFI-0000390
5	7	2	7	5	5	1	2	BFI-0000391
9	5	9	66	16	16	3	15	BFI-0000392
5	3	1	7	3	2	2	1	BFI-0000395
5	2	3	13	9	2	2	1	BFI-0001755

Participant identifier

IgE-IgA2  
IgE-IgG4  
IgE-IgD  
IgE-IgG3  
IgE-IgG1  
IgE-IgG2  
IgE-IgA1

Nearest isotype neighbor  
by Hamming distance