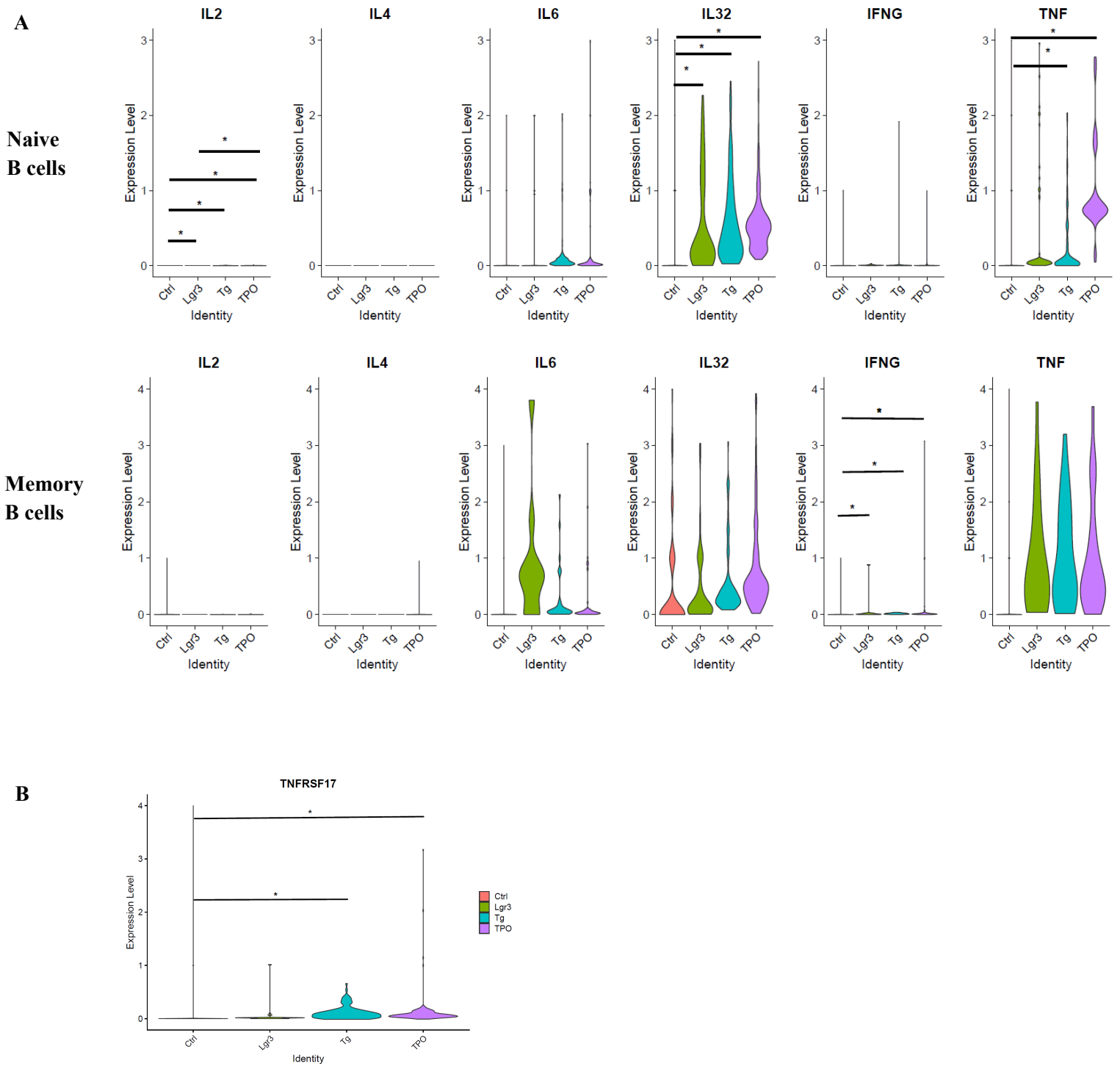
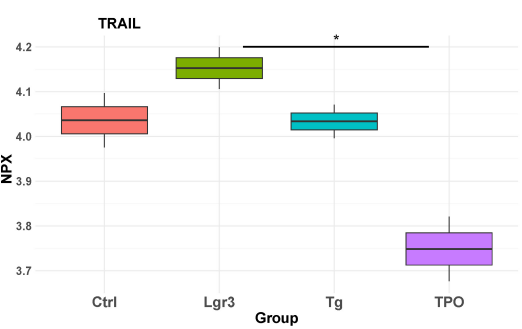
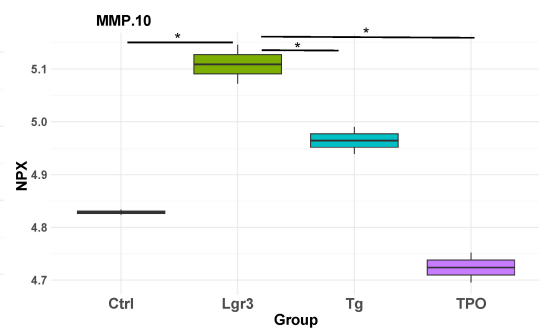
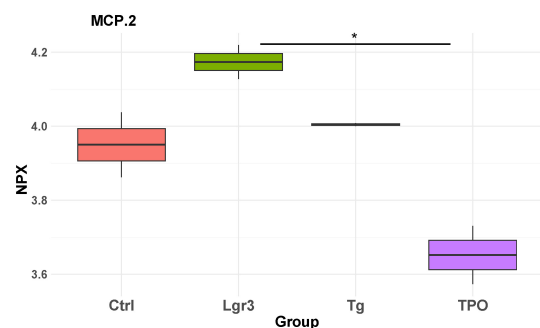
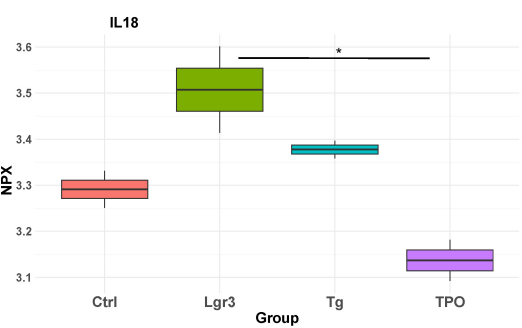
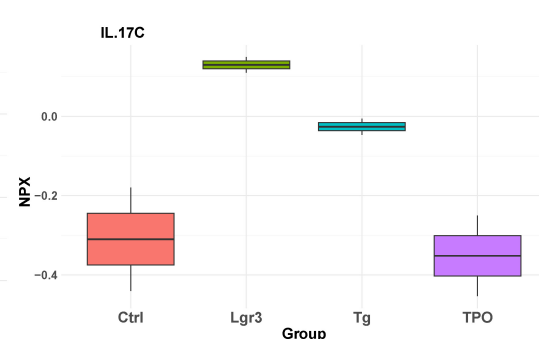
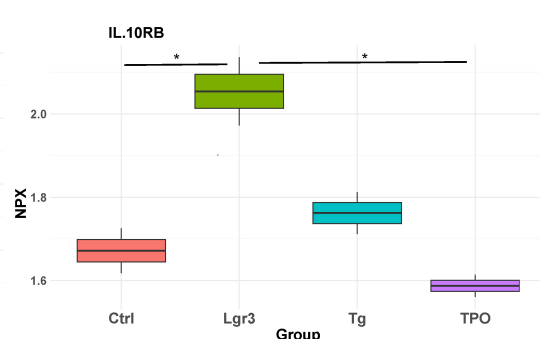
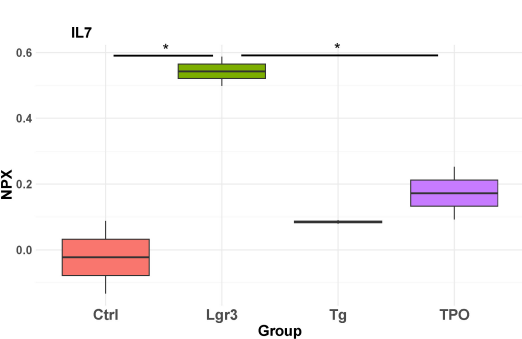
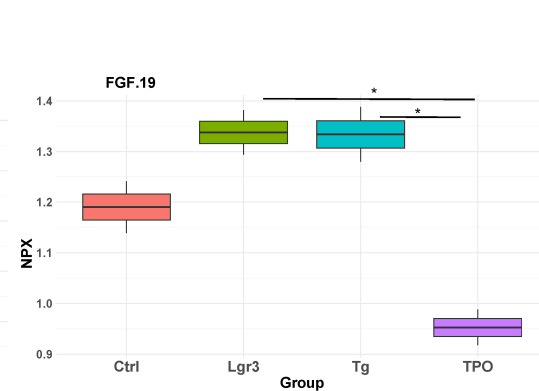
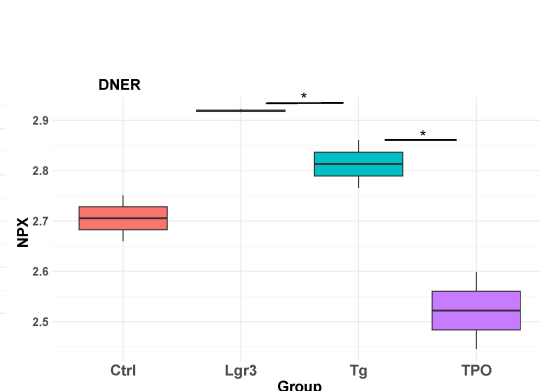
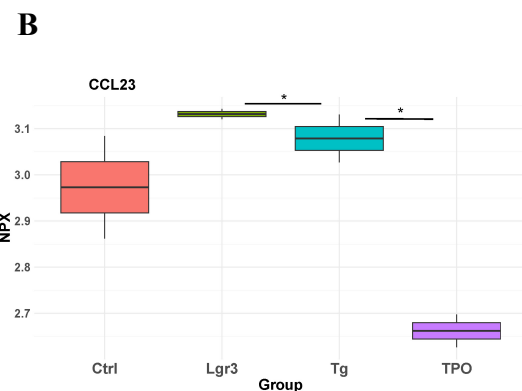
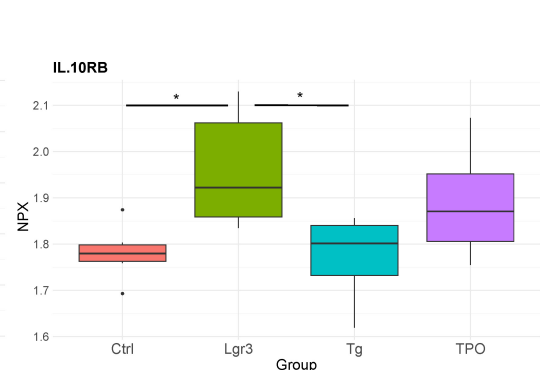
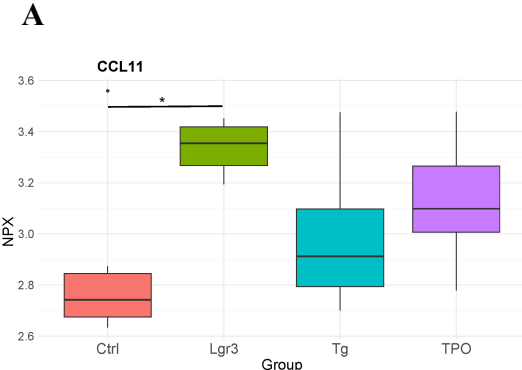




Supplementary Figure S1. Gene expression in B-cell clusters of PBMCs.

(A) Violin plot of genes related to cytokine in naive B-cell and memory B-cell clusters in PBMCs by antigen. (B) Violin plot of TNFRSF17 in memory B-cell clusters in PBMCs by antigen. PBMC: peripheral blood mononuclear cell.

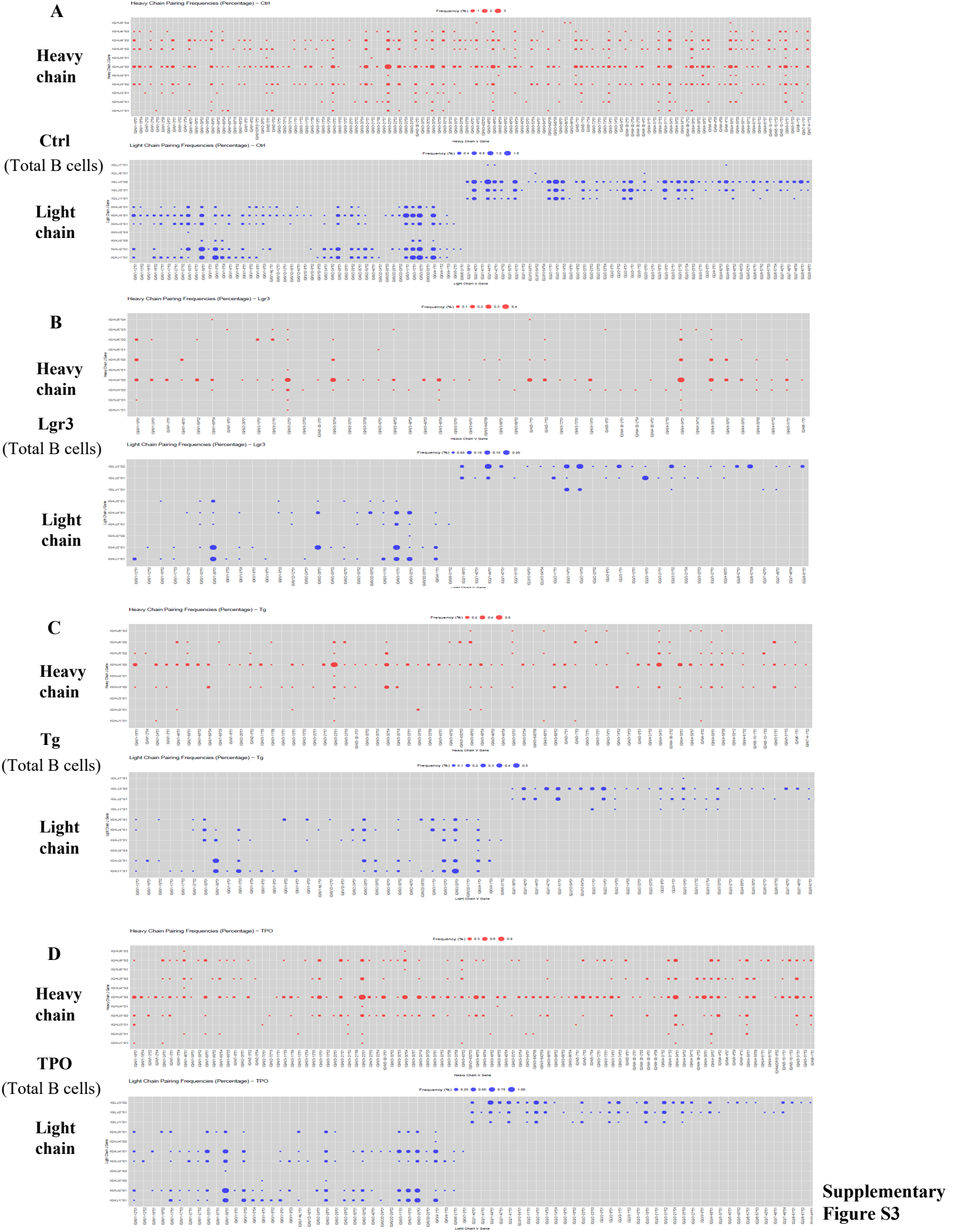


Supplementary Figure S2. Concentrations of proteins associated with inflammation are produced by blood mononuclear cells upon stimulation with each antigen.

(A) Genes with significant differences in protein concentrations produced by PBMCs upon stimulation with each antigen. (B) Genes with significant differences in protein concentrations produced by intrathyroidal blood mononuclear cells upon stimulation with each antigen.

Data were presented as medians and interquartile ranges (IQR). Data were analyzed using one-way ANOVA with Tukey's honest significant difference test. *: $p < 0.05$.

PBMC: peripheral blood mononuclear cell.



Supplementary Figure S3. Bubble plot showing BCR repertoires of total B cells in PBMCs

(A) Bubble plots showing BCR repertoires of total B cells in PBMCs for the control group. (B) Bubble plots showing BCR repertoires of total B cells in PBMCs for the Lgr3 group. (C) Bubble plots showing BCR repertoires of total B cells in PBMCs for the Tg group. (D) Bubble plots showing BCR repertoires of total B cells in PBMCs for the TPO group.

PBMC: peripheral blood mononuclear cells; BCR: B-cell receptor; Tg: thyroglobulin;

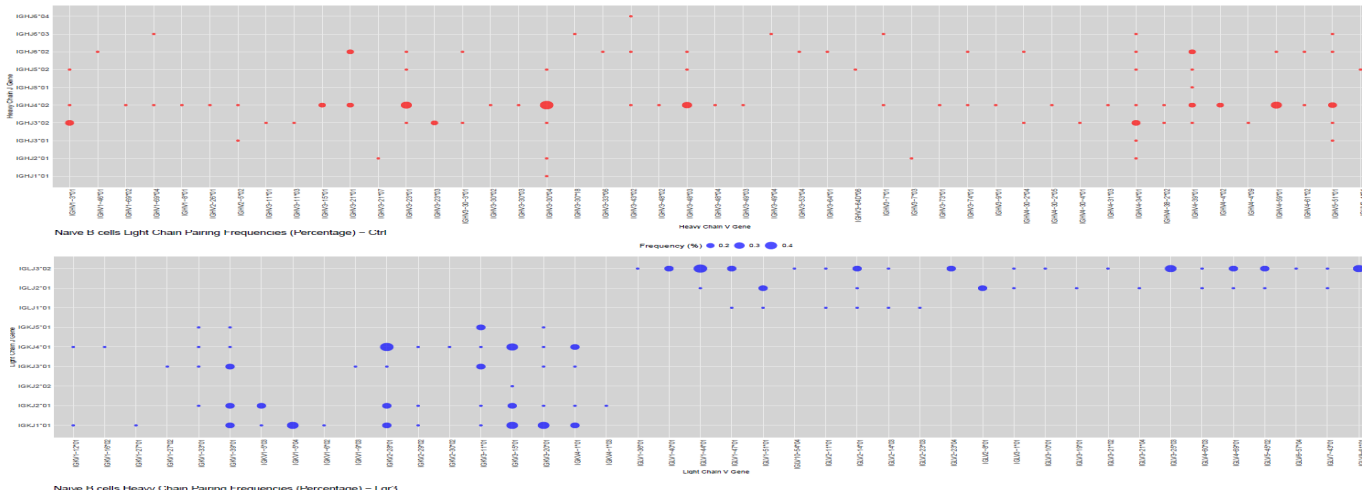
TPO: thyroid peroxidase.

A

Heavy chain

CtrlNaive
B cells

Light chain



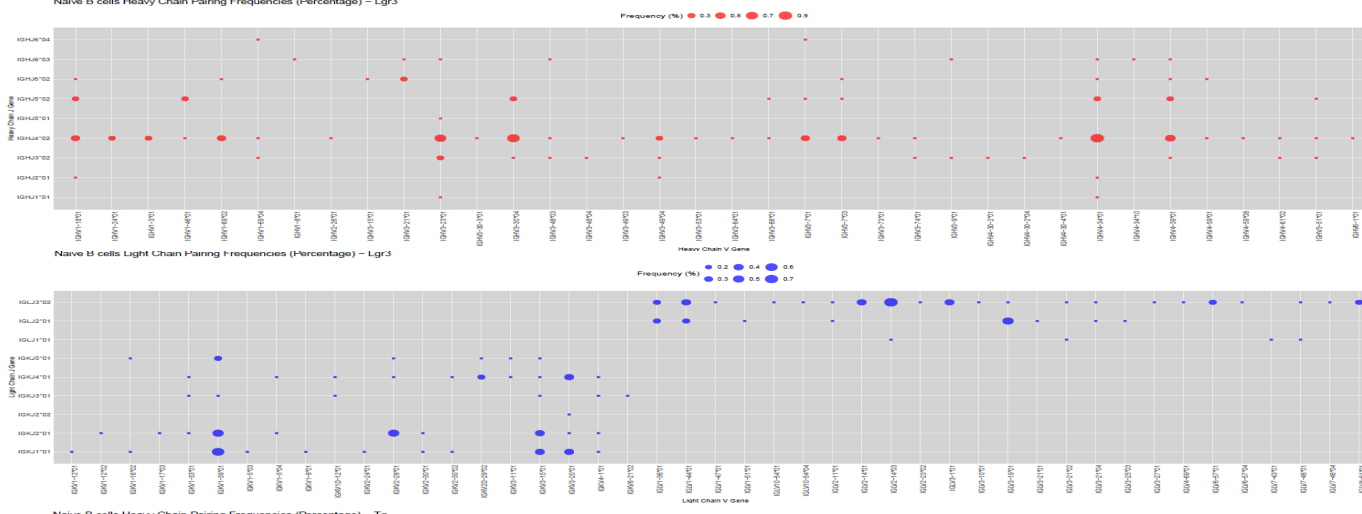
B

Heavy chain

Lgr3

Naive
B cells

Light chain



C

Heavy chain

Tg

Naive
B cells

Light



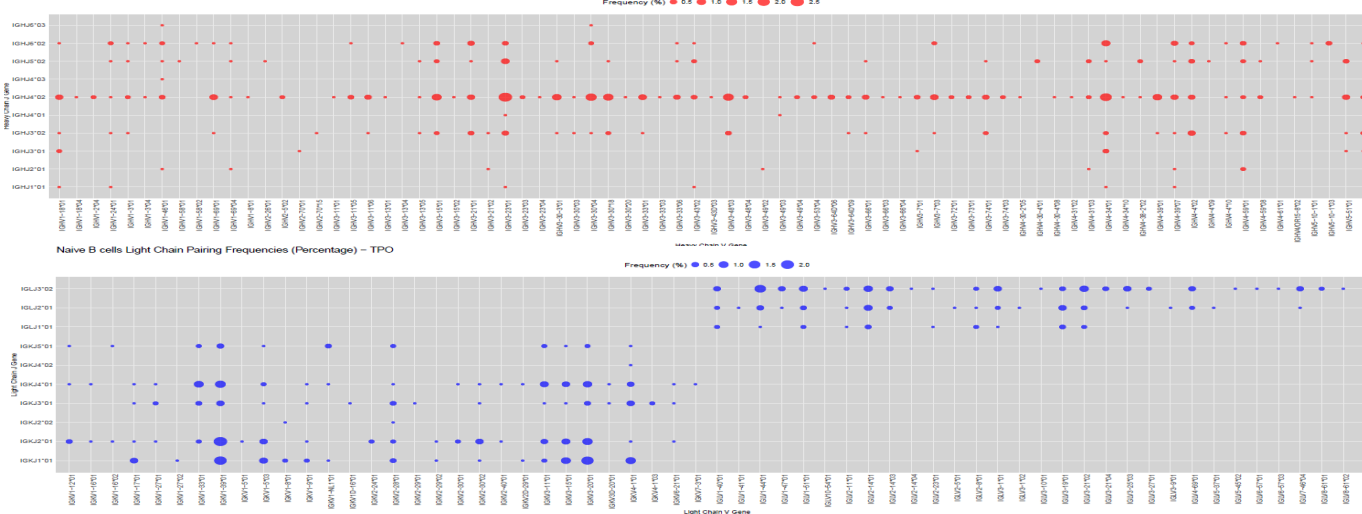
D

Heavy chain

TPO

Naive
B cells

Light



Supplementary Figure S4. Bubble plot showing BCR repertoires of naive B cells in PBMCs

(A) Bubble plots showing BCR repertoires of naive B cells in PBMCs for the control group. (B) Bubble plots showing BCR repertoires of naive B cells in PBMCs for the Lgr3 group. (C) Bubble plots showing BCR repertoires of naive B cells in PBMCs for the Tg group. (D) Bubble plots showing BCR repertoires of naive B cells in PBMCs for the TPO group.

PBMC: peripheral blood mononuclear cells. BCR: B-cell receptor. Tg: thyroglobulin

TPO: thyroid peroxidase

Light chain



Supplementary Figure S5. Bubble plot showing BCR repertoires of memory B cells in PBMCs

(A) Bubble plots showing BCR repertoires of memory B cells in PBMCs for the control group. (B) Bubble plots showing BCR repertoires of memory B cells in PBMCs for the Lgr3 group. (C) Bubble plots showing BCR repertoires of memory B cells in PBMCs for the Tg group. (D) Bubble plots showing BCR repertoires of memory B cells in PBMCs for the TPO group. PBMC: peripheral blood mononuclear cells. BCR: B-cell receptor. Tg: thyroglobulin. TPO: thyroid peroxidase.

Seq1	Lgr3					Seq1	Tg					Seq1	TPO				
Nr	Normal Scan	Start	End	Overlap		Nr	Normal Scan	Start	End	Overlap		Nr	Normal Scan	Start	End	Overlap	
1	GMGCSSPPCECHQEE	1	15	0		1	MSPFLYLVLVLGLH	1	15	0		1	MRALAVLSVTLVMAC	1	15	0	
2	SPPCECHQEEDFRVT	5	19	11		2	YVLLVLGLHATHIC	5	19	11		2	VLSVTLVMACTEAFF	5	19	11	
3	CHQEEDFRVTKCDIQ	9	23	11		3	VLGLHATHICASPEG	9	23	11		3	LVMACTEAFFPFISR	9	23	11	
4	DFRVTKCDIQRISL	13	27	11		4	ATHICASPEGKVATC	13	27	11		4	TEAFFPFISR GKELL	13	27	11	
5	CKDIQRISLPPSTQ	17	31	11		5	ASPEGKVATACHSSQP	17	31	11		5	PFISR GKELLWGKPE	17	31	11	
6	RISLPPSTQTLKLI	21	35	11		6	KVATACHSSQPNATLY	21	35	11		6	GKELLWGKPEESRVS	21	35	11	
7	PPSTQTLKLIETHLR	25	39	11		7	HSSQPNATLYKMSSI	25	39	11		7	WGKPEESRVSSVLEE	25	39	11	
8	TLKLIETHLRTIPSH	29	43	11		8	NATLYKMSSINADFA	29	43	11		8	ESRVSSVLEESKRLV	29	43	11	
9	ETHLRTIPSHAFSNL	33	47	11		9	KMSSINADFAFNLYR	33	47	11		9	SVLEESKRLVDTAMY	33	47	11	
10	TIPSHAFSNLPNISR	37	51	11		10	NADFAFNLYRRFTVE	37	51	11		10	SKRLVDTAMYATMQR	37	51	11	
11	AFSNLPNISRIVYSI	41	55	11		11	FNLYRRFTVETPDKN	41	55	11		11	DTAMYATMQRNLLKR	41	55	11	
12	PNISRIVYSIDVTLQ	45	59	11		12	RFTVETPDKNIFPSP	45	59	11		12	ATMQRNLLKRGILSP	45	59	11	
13	IYVSIDVTLQQLESH	49	63	11		13	TPDKNIFSPVSISA	49	63	11		13	NLLKRGILSPAQLLS	49	63	11	
14	DVTLQQLESHSFYNL	53	67	11		14	IFFSPVSISAAVLML	53	67	11		14	GILSPAQLLSFSKLP	53	67	11	
15	QLESHSFYNLSKVTH	57	71	11		15	VSISAAVLMLSFGAC	57	71	11		15	AQLLSFSKLPEPTSG	57	71	11	
16	SFYNLSKVTHIEIRN	61	75	11		16	ALVMLSFGACSTQT	61	75	11		16	FSKLPEPTSGVIARA	61	75	11	
17	SKVTHIEIRNTRNLT	65	79	11		17	SFGACSTQTETVET	65	79	11		17	EPTSGVIARAAEIME	65	79	11	
18	IEIRNTRNLTIDPD	69	83	11		18	CSTQTEIVETLGFNL	69	83	11		18	VIARAAEIMETSIVA	69	83	11	
19	TRNLTIDPDALKEL	73	87	11		19	EIVETLGFNLDTTPM	73	87	11		19	AEIMETSIVAMKRKV	73	87	11	
20	YIDPDALKELPLLKF	77	91	11		20	LGFNLDTTPMVEIQH	77	91	11		20	TSIVAMKRKVNLKTQ	77	91	11	
21	ALKELPLLKFLGIFN	81	95	11		21	TDTPMVEIQHGFQHL	81	95	11		21	MKRKVNLKTQQSQHP	81	95	11	
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139	VENGDFVHCEESGRR	553	567	11
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141	ESGRRVLVYSCRHGY	561	575	11
142	VLVYSCRHGYELQGR	565	579	11
143	CRHGYELQGREQLTC	569	583	11
144	ELQGREQLTCTQEGW	573	587	11
145	EQLTCTQEGWDFQPP	577	591	11
146	TQEGWDFQPPLCKDV	581	595	11
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152	RCRNTKGGFQCCLCAD	605	619	11
153	KGGFQCCLCADPYELG	609	623	11
154	CLCADPYELGDDGRT	613	627	11
155	PYELGDDGRTCVDSG	617	631	11
156	DDGRTCVDSGRLPRA	621	635	11
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158	RLPRATWISMSLAAL	629	643	11
159	TWISMSLAALLIGGF	633	647	11
160	SLAALLIGGFAGLTS	637	651	11
161	LIGGFAGLTSTVICR	641	655	11
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163	TVICRWTRTGKSTL	649	663	11
164	WTRTGKSTLPISET	653	667	11
165	TKSTLPISETGGGTP	657	671	11
166	PISETGGGTPELRCG	661	675	11
167	GGGTPELRCGKHQAV	665	679	11
168	ELRCGKHQAVGTSPQ	669	683	11
169	KHQAVGTSPQRAAAQ	673	687	11
170	GTSPQRAAAQDSEQE	677	691	11
171	RAAAQDSEQESAGME	681	695	11
172	DSEQESAGMEGRDTH	685	699	11
173	SAGMEGRDTHRLPRA	689	703	11
174	GRDTHRLPRAL	693	704	11