

**Supplemental Table S4.** Downregulated Differentially Expressed Genes and Enriched Functional Annotations of BL-PTCs after Adjustment for the Thyroiditis Status according to the Clinicopathological Prognostic Factors

Annotation	<i>q</i> value	Genes
Age		
Antigen binding	$1.13 \times 10^{-13}$	<i>IGHV3-30, IGHV1-46, IGKV1D-39, IGHG3, IGHG4, IGHG1, IGHG2, IGLV6-57, IGLV3-21, IGKV3-15, IGLC1, IGLC2, IGKV3-20</i>
Complement activation	$1.49 \times 10^{-13}$	<i>IGHV3-30, IGHV1-46, IGKV1D-39, IGHG3, IGHG4, IGHG1, IGHG2, IGLV6-57, IGLV3-21, IGKV3-15, IGLC1, IGLC2, IGKV3-20</i>
Serine-type endopeptidase activity	$3.18 \times 10^{-13}$	<i>IGHV3-30, KLK5, IGHV1-46, IGKV1D-39, HPR, F2, IGHG3, IGHG4, IGHG1, IGHG2, IGLV6-57, IGLV3-21, IGKV3-15, IGLC1, IGLC2, IGKV3-20</i>
Complement activation, classical pathway	$3.73 \times 10^{-13}$	<i>IGHV3-30, IGHV1-46, IGKV1D-39, IGHG3, IGHG4, IGHG1, IGHG2, IGLV6-57, IGLV3-21, IGKV3-15, IGLC1, IGLC2, IGKV3-20</i>
Fc-gamma receptor signaling pathway involved in phagocytosis	$5.45 \times 10^{-12}$	<i>IGHV3-30, IGHV1-46, IGKV1D-39, IGHG3, IGHG4, IGHG1, IGHG2, IGLV6-57, IGLV3-21, IGKV3-15, IGLC1, IGLC2, IGKV3-20</i>
Proteolysis	$3.32 \times 10^{-9}$	<i>DPP10, IGHV3-30, KLK5, IGKV1D-39, F2, IGHG3, IGHG4, IGHG1, CAPN12, IGHG2, IGLV6-57, ASTL, IGLV3-21, IGKV3-15, IGLC1, IGLC2, IGKV3-20</i>
Receptor-mediated endocytosis	$1.33 \times 10^{-7}$	<i>IGHV3-30, AMBP, IGLV6-57, IGLV3-21, IGKV3-15, IGHV1-46, IGLC1, IGKV1D-39, HPR, IGLC2, IGKV3-20</i>
Immunoglobulin complex, circulating	$1.90 \times 10^{-7}$	<i>IGHG3, IGHG4, IGHG1, IGHG2, IGLC1, IGLC2</i>

BL-PTC, *BRAF*-like papillary thyroid carcinoma.