Supplementary Information

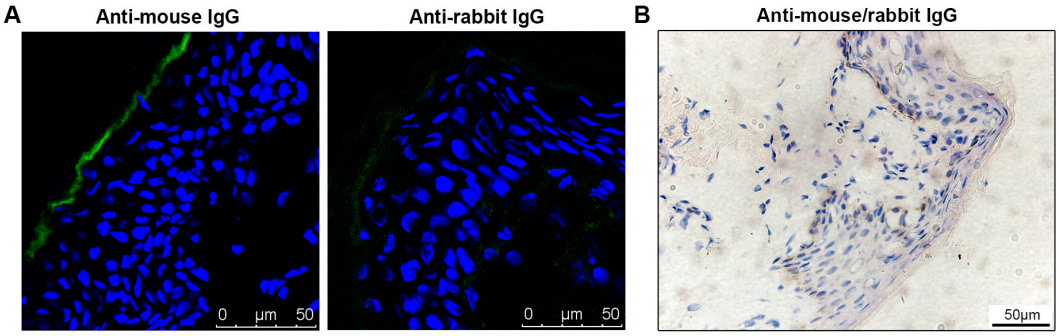

Figure S1. Secondary antibody controls of immunofluorescence staining and immunohistochemical staining in skin tissues. (**A**) Tissues were stained with Dylight 488-conjugated anti-mouse or anti-rabbit IgG antibodies as negative control of immunofluorescence staining; (**B**) Tissues were stained with HRP-conjugated anti-mouse/rabbit IgG antibody as negative control of immunohistochemical staining.

Table S1. Mass spectrometry results of the protein band at M_r 55,000 bound by protein G.

Rank	Accession	Mass	Score	Description
1	gi|119631182	284,520	73	hCG2039413, isoform CRA_c
5 *	gi|33319146	13,466	58	Ig heavy chain variable region, VH3 family
9 *	gi|37778004	16,025	49	immunoglobulin heavy chain variable region
14 *	gi|247424481	13,894	46	immunoglobulin heavy chain variable region
18 *	gi|371446775	13,354	44	immunoglobulin G heavy chain variable region

* The segments of immunoglobulin heavy chain.

Table S2. V–D junctions and D–J junctions of epidermis-derived IgG and IgA heavy chain.

Cases		Clones	No. of Clones	V Region End	P	N1	D-Region	N2	J Region Start
Igγ	Case 1	1	1	tgtgcgagaga	t	ttccgggattcag	gtggatatacctatg.....	ttcctactccagc	.....ctactatatggacgtctgg
		2	1	tgtgcgagaga	t	ttccgggattcag	gtggatatacctatg.....	ttcctactccagc	.....ctactatatggacgtctgg
		3	1	tgtgcgagaga	t	ttccgggattcag	gtggatatagctatg.....	ttcctactccagc	.....ctactatatggacgtctgg
		4	1	tgtgcgagaga	t	ttccgggattcag	gtggatatagctatg.....	ttcctactccagc	.....ctactatatggacgtctgg
	Case 2	1–6	6	tgtgcacac....		c	.....tgctcattactgcta....	gtaccac	....ctttgactactgg
		7	1	tgtgcacac....		c	.....tgctcattactgcta....	gtaccac	....ctttgactactgg
		8	1	tgtgcacac....		c	.....tgctcattactgcta....	gtaccac	....ctttgactactgg
		9	1	tgtgcacac....		c	.....tgctcattactgcta....	gtaccac	....ctttgactactgg
Igα	Case 1	1	1	tgtgtgagaga	tc	gaatc	....attgtagcacctg....	tttcagactattaca	.....actacggtttg
		2	1	tgtgtgagaga	tc	gaatc	....attgtagcacctg....	tttcagactattaca	.....actacggtttg
		3	1	tgtgcgaga		catt	.....gtacaacctg.....	tcagagccttgatt	.....ctcttgacatctgg
		4	1	tgtgcgaga		catt	.....gtacaacctg.....	tcagagccttgatt	.....ctcttgacatctgg
	Case 2	1–2	2	tgcgcga....		cctc	tgactatagtga....	ttctgtaccctacttca	.....agaagtgg
		3	1	tgcgcga....		cctc	tgactatagtga....	ttctgtaccctacttca	.....agaagtgg
		4	1	tgcgcga....		cctc	tgactatagtga....	ttctgtaccctacttca	.....agaagtgg
		5	1	tgcgcga....		cctc	tgactatagtga....	ttctgtaccctacttcaagaag	.....tgg
		6	1	tgcgcga....		cctc	tgactatagtga....	ttctgtaccctacttcaagaag	.....tgg

The underlined nucleotides represent mutated nucleotides compared with germline genes; "." represents the missing nucleotides of junctions compared with the Ig germline genes. Each point represents one nucleotide.

Table S3. Sequences of PCR primers used in this study.

Gene Name	Primer	Primer Name	Primer Sequence 5'–3'	Product Length (bp)
Igγ or Igα variable region	Sense primer	VH1	GGCCTCAGTGAAGGTCTCCTGCAAG	
		VH2	GTCTGGTCCTACGCTGGTGAAACCC	
		VH3	CTGGGGGGTCCCTGAGACTCTCCTG	
		VH4	CTTCGGAGACCCTGTCCCTCACCTG	
		VH5	CGGGGAGTCTCTGAAGATCTCCTGT	
		VH6	TCGCAGACCCTCTCACTCACCTGTG	
	External antisense primer	CγCH1 (for Igγ)	TCTTGTCCACCTTGGTGTTGCT	600–700 bp
		CαCH1 (for Igα)	ATTCGTGTAGTGCTTCACGTGG	600–700 bp
	Internal antisense primer	JH	CTTACCTGAGGAGACGGTGACC	About 350 bp
Igγ constant region	Sense primer		AGGACTCTACTCCCTCAGCAG	
	Antisense primer		TCAGGCTGACCTGGTTCTTG	733 bp
Igα constant region	Sense primer		TGTGACCTGGAGCGAAAGC	
	Antisense primer		CGGGATGCCCAAGTCAGGTA	566 bp
CD19	Sense primer		AAGGGGCCTAAGTCATTGCT	
	Antisense primer		CACGTTCCCGTACTGGTTCT	347 bp