Supporting Information

Scheid et al. 10.1073/pnas.1113395108

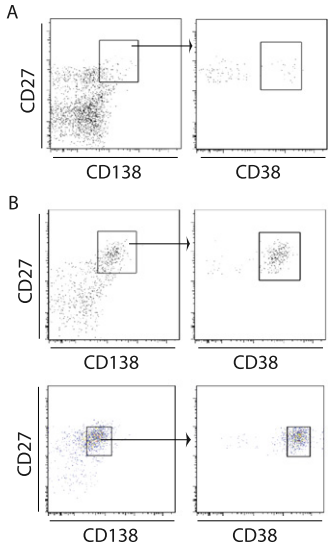

Fig. S1. Representative FACS profiles of sorted plasma cells from HDs: FACS plots of bone marrow mononuclear cells from HD16 before (*A*) and HD16 (*B*, *Upper*) and HD21 (*B*, *Lower*) after CD138-magnetic bead-mediated enrichment. Shown are representative sort gates for the isolation of $CD138^{+}CD27^{+}CD38^{+}$ single bone marrow plasma cells after magnetic bead-mediated enrichment of $CD138^{+}$ mononuclear bone marrow cells.

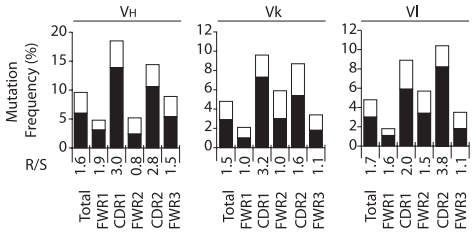

Fig. S2. IgG plasma cell antibodies show signs of antigen-mediated selection. Bar graphs summarize the frequency of nucleotide exchanges leading to replacement (*R*, solid bars) and silent (*S*, open bars) mutations in CDRs and framework regions of VH, Vk, and Vl genes from IgG-positive bone marrow plasma cells of four HDs. The *R*:*S* nucleotide exchange ratio is indicated below the graphs.

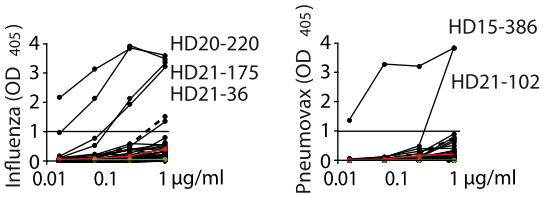

Fig. S3. Microbe-specific bone marrow plasma cells. IgG plasma cell antibodies and negative control antibody mGO53 (green line) (1) and low polyreactive antibody eiJB40 (red line) (1) from HDs were tested for reactivity with seasonal influenza vaccine and nonconjugated pneumococcal polysaccharide vaccine. Horizontal lines show cutoff OD_{405} for positive reactivity. Clone names of nonpolyreactive, non–self-reactive vaccine-specific antibodies are indicated.

1. Wardemann H, et al. (2003) Predominant autoantibody production by early human B cell precursors. *Science* 301:1374–1377.

Table S1. Sequence data and reactivity of IgG antibodies from bone marrow plasma cells from healthy donors HD15, HD16, HD20, and HD21

	Heavy						Light				Reactivity							
Ig	VH	JH	CDR3 (aa)	Isotype	V-mut number	VL isotype	Vκ/λ	Jκ/λ	CDR3 (aa)	V-mut number	ssDNA	dsDNA	LPS	Insulin	HEp-2 ELISA	HEp-2 IFA	Pneumoc.	Influenza
p-HD15-14	3-15	3	TGWYGAFDI	IgG1	27	κ	1-39	2	QQSVSMPYT	12	/	/	/	/	/	/	/	/
p-HD15-20	3-21	6	GGGSNWWDVD	IgG2	17	κ	3-11	3	QQRAKWPVT	10	/	/	/	/	/	c	/	/
p-HD15-25*	4-61	5	IPMLRVATFDT	IgG1	37	κ	1-5	1	QQYNSYPWT	6								
p-HD15-54	3-21	6	RQLMVVAANQVYYYGMDV	IgG2	20	κ	3-20	2	QHLNSFPRVT	19	/	/	/	/	/	/	/	/
p-HD15-56	1-69	2	EAAGNAGGDADWFLDL	IgG4	47	κ	1-5	1	QHYSSYSRT	14	X	/	X	/	/	c	/	/
p-HD15-61	1-24	5	DRVTLYGMIILDS	IgG1	23	κ	3-11	4	QQAESFPVT	17	X	X	X	X	/	c/n	/	/
p-HD15-63	1-24	6	ALIVANYYSVDV	IgG1	23	κ	3-20	3	HQYGSSXLT	21	/	/	/	/	/	c	/	/
p-HD15-73*	1-2	5	LNHDFWSGYPLVAY	IgG1	30	κ	2-30	4	MQATHWPPLT	13								
p-HD15-75	3-23	6	DLWDCSGHSCYDEDDS	IgG1	20	κ	4-1	1	QQYYNNPRT	21	/	/	/	/	/	/	/	/
p-HD15-85	1-69	4/5	SAIPAAKRTYFDY	IgG2	24	κ	2-28	5	MQALQTPFT	4	/	/	/	/	/	/	/	/
p-HD15-246	4-59	6	FRSGYYHYYGMDV	IgG1	29	κ	1-39	5	QQYNRRPPYN	34	/	/	/	/	/	/	/	/
p-HD15-255	3-23	4	ASSAYGVVIDF	IgG1	30	κ	3-20	1	QQYANSPPWT	12	/	/	/	/	/	/	/	/
p-HD15-301*	1-69	6	GAVAGWANV	IgG1	35	κ	3-20	2	QQYYVTPWT	15								
p-HD15-322*	4-34	4	VAFWSGYYPFDQ	IgG1	22	κ	1-5	1	QQYSSSSPT	14								
p-HD15-347*	3-21	4	AAYGY	IgG1	27	κ	1-39	3	QESYSAPFT	24								
p-HD15-349	1-18	5	RDCRGGSCPRRF	IgG1	18	κ	1-5	2	QQYNGYS	8	/	/	/	/	/	c	/	/
p-HD15-364	4-61	4	EAMMVMVGKSRDKFYFDN	IgG1	21	κ	1-39	1	QQSYSVSRT	12	/	/	/	/	/	/	/	/
p-HD15-368*	3-11	4	ASKTTVTTHFDY	IgG1	27	κ	1-39	1	HQTYFTPWT	27								
p-HD15-369	3-48	6	DRLVTTFYYFHGLDV	IgG3	39	κ	1-39	5	QQCYSSPQT	30	/	/	/	/	/	/	/	/
p-HD15-374	3-53	6	SPGPHTGYYYYSMDV	IgG1	14	κ	3-15	1	QQYNKWWT	10	/	/	/	/	/	/	/	/
p-HD15-376	3-21	1	PLVPATILIRH	IgG1	15	κ	1-5	1	QQYYIDWT	14	X	X	X	X	X	c	/	/
p-HD15-391	3-11	3	DGNSIAGAPGGEAFDI	IgG2	13	κ	3-15	2	QQYNDWPLYT	7	/	/	/	/	/	/	/	/
p-HD15-394*	4-31	3	SPSPDYYDSTGLSYAFDI	IgG1	21	κ	4-1	1	QQYYSTPRS	10								
p-HD15-401*	3-23	4	SFKQPVAGGDYFDF	IgG1	35	κ	3-15	1	MQVLEIPVT	8								
p-HD15-415	4-34	6	GGGRDDYNFARSRYSYYGMDV	IgG1	17	κ	3-20	2	YQYGSSPYT	23	/	/	/	/	/	/	/	/
p-HD15-419*	1-69	4	DHIAAAGIDY	IgG2	22	κ	1-39	3	QQTYLTPPAT	15								
p-HD15-439*	1-69	6	VRRGHSSVEYLYSYLDV	IgG1	39	κ	1-39	2	MQVLQTPHT	11								
p-HD15-442*	1-8	5	GTVYYDFWSGSQGGLGWFDP	ND	0	κ	4-1	2	LQHDTYPYT	21								
p-HD15-470*	5-51	4	SLTCESGACYTGVWHY	IgG1	29	κ	2-28	2	MQTLQTFYT	22								
p-HD15-481	4-61	6	ESKYYPWGMDV	IgG1	31	κ	1-17	1	QQADSFPIT	14	/	/	/	/	/	/	/	/
p-HD15-494	1-69	4	DESYNGFGGRGDH	IgG1	20	κ	3-20	1	QQYAGSPWT	9	/	/	/	/	/	/	/	/
p-HD15-501	3-33	4	GSNYDYRGPYSEKFYFDY	IgG1	24	κ	1-17	4	QQYYTTPVT	8	/	/	/	/	/	/	/	/
p-HD15-566*	3-11	5	GMYTGTYGAGA	IgG1	24	κ	1-5	1	QQYKTYSWT	8								
p-HD15-589*	4-31	4	ESRPDRSGYYAFEF	IgG1	29	κ	2-28	4	QQYNAWPPGT	14								
p-HD15-596κ#	3-53	5	DRSGSGYSGRSGGWFDP	IgG1	12	κ	1-5	1	QQYNGYSWT	13								
p-HD15-133	3-21	4	AKLQYFDWLLSGPIDY	IgG1	1	λ	1-47	3	AVWDDSVRGWV	23	X	X	X	X	X	c	/	/
p-HD15-134	4-59	4	QKSGWLGPSTFDY	IgG1	37	λ	3-21	3	QVWESNADDLNWV	23	/	/	/	/	/	/	/	/
p-HD15-149*	3-53	4	GASPYNYGSRRMGFYDD	IgG1	24	λ	1-47	3	ASWDNSLSGRWL	18								
p-HD15-203*	3-30	6	DNYYGSYFYYYGVDV	IgG1	14	λ	3-21	2	QVWDRSSDHVV	13								
p-HD15-267	3-21	4	GDEYRSLDY	IgG1	26	λ	1-40	2	QSYDRGLGVV	9	/	/	/	/	/	/	/	/
p-HD15-328	3-9	6	DTSVPIFGGGMDV	IgG2	11	λ	1-44	2	AAWDDSLNAVV	20	/	/	/	/	/	/	/	/
p-HD15-337	3-30	4	GGGWIRPPLDY	IgG1	9	λ	1-40	3	QSFDITLSAWV	15	/	/	/	/	/	/	/	/
p-HD15-340*	3-21	6	WAFYHSLDV	IgG2	24	λ	6-57	3	QSYDSTNQV	11								

Table S1. Cont.

	Heavy						Light				Reactivity							
Ig	VH	JH	CDR3 (aa)	Isotype	V-mut number	VL isotype	Vκ/λ	Jκ/λ	CDR3 (aa)	V-mut number	ssDNA	dsDNA	LPS	Insulin	HEp-2 ELISA	HEp-2 IFA	Pneumoc.	Influenza
p-HD15-350*	3-9	2	DFSAGYFQYCDL	IgG1	17	λ	3-21	2	QVYDSVSDHVV	15								
p-HD15-366	3-7	4	HVMGFRFLDY	IgG2	14	λ	1-40	1	QSYDSGLGGYV	14	/	/	/	/	X	c	/	/
p-HD15-386	3-15	1	DAPGTVTRSQ	IgG2	18	λ	1-51	2	GTWDSSLTAGV	12	/	/	/	/	/	/	X	/
p-HD15-403*	4-59	6	DALADISASKGALDV	IgG1	38	λ	1-47	2	AAWDHSLSGPV	12								
p-HD15-414	4-59	4	ERRHSGMNRWFAFDF	IgG1	27	λ	2-23	3	CSYAGTNTNWV	14	/	/	/	/	/	/	/	/
p-HD15-426	1-18	4	DYFHSGSSYYFDY	IgG1	20	λ	1-40	3	QCYDSSLTGSGV	18	/	/	/	/	/	/	/	/
p-HD15-431	3-9	5	DVGYTSSWADF	IgG1	34	λ	2-14	2	SSYTTISTLV	12	/	/	/	/	/	n	/	/
p-HD15-432	4-61	6	DHVYSGYENPYYYGMDV	IgG1	30	λ	1-47	3	AAWDDSLRALV	11	/	/	/	/	/	/	/	/
p-HD15-442*						λ	1-47	1	AAWDDSLSGYV	2								
p-HD15-467	3-33	4	LYGSGSFFNPIDY	IgG1	17	λ	3-1	3	QAWDSNTKV	10	X	X	X	X	X	c	/	/
p-HD15-477*	1-18	4	VLTGTWDGAGGIDY	IgG2	25	λ	3-27	3	FAAADNNWM	12								
p-HD15-478	3-7	6	DLLNRVGAVGRMFGSLGMDV	IgG1	13	λ	3-25	3	QSADSTDTYPV	9	/	X	X	X	/	/	/	/
p-HD15-493	4-39	4	ADYESLLDY	IgG2	29	λ	2-14	2	SSYTSTTTPVI	17	/	/	/	/	/	/	/	/
p-HD15-527	4-34	4/5	PYYYDSSGDY	IgG1	0	λ	6-57	3	QSYDSSNWV	0	/	/	/	/	/	/	/	/
p-HD15-537	4-34	6	FTLLPGQHNFHYYVDV	IgG1	21	λ	1-47	3	AAWDDSLSGRV	14	/	/	/	/	/	/	/	/
p-HD15-551	1-18	4	GRESDFWSGIYYFDY	IgG1	0	λ	2-8	3	SSYAGSNNWV	0	/	/	/	/	/	/	/	/
p-HD15-563	3-33	2	GRINSSGWYLARWYFDL	IgG1	0	λ	1-40	2	QSCDSRLCPNVV	7	/	/	/	/	/	/	/	/
p-HD15-574	3-23	4	GARPSPSNYLYY	IgG1	1	λ	1-44	2	AAWDDSLNGLV	0	/	/	/	/	/	/	/	/
p-HD15-576	4-34	6	GPRNSQLPLDYFYYYMDV	IgG1	17	λ	2-14	2	SSYTTNVI	8	/	/	/	/	/	/	/	/
p-HD15-588*	4-61	5	DHLIVVVPAAMSRVGGFGELF PGWFDP	IgG1	14	λ	1-51	3	GTWDSSLSVWV	0								
p-HD15-596λ#						λ	2-14	2	SSYTSSSTLVV	3								
p-HD16-28*	5-51	6	LYRSDILVELEAIHGTWSMDV	IgG1	44	κ	3-15	1	QQYHDWPPAWT	17								
p-HD16-30*	3-15	4	DLPDVPSWPDY	IgG2	11	κ	4-1	2	QQYDSIPYT	13								
p-HD16-31	3-30	5	PNGGWYTPPFDP	IgG1	25	κ	3-15	1	QHYYQGPPWT	17	/	/	/	/	/	/	/	/
p-HD16-38	4-39	5	HTTIVGAKSRTGWFDR	IgG1	39	κ	1-5	3	QEYNTNFPS	39	/	/	/	/	/	/	/	/
p-HD16-42*	3-21	4	GYCAGGSCYIDY	IgG1	25	κ	4-1	4	QQYYDSPLT	8								
p-HD16-44*	3-30	4	SQVHSWAPPYFDS	IgG1	35	κ	4-1	4	QQYYLSPNT	13								
p-HD16-55	3-30	5	GVSSVTTINWLDP	IgG1	23	κ	3-15	1	QHYYQGPPWT	16	/	/	/	/	/	/	/	/
p-HD16-60	3-30	4	VEVAYDY	IgG1	22	κ	2-28	2	IQAPQSPQLT	10	/	/	/	/	/	/	/	/
p-HD16-67	5-51	4	SLLYHESAYYSDY	IgG1	19	κ	3-20	4	QQYGSSPLT	5	/	/	/	/	/	/	/	/
p-HD16-71	4-39	5	RRSGWYDS	IgG1	23	κ	3-15	4	QQYDNWPLLLT	7	/	/	/	/	/	/	/	/
p-HD16-78	3-30	5	PSTGWYTPPFDP	IgG1	23	κ	2-28	4	MQGLQSPLT	11	/	/	/	/	/	c	/	/
p-HD16-80	3-23	4	EFGDSGYYPIDY	IgG1	12	κ	3-15	4	QQYNDWPLT	9	/	/	/	/	/	c	/	/
p-HD16-95	3-30	5	PNNGWYTPPFDP	IgG1	34	κ	3-15	1	QHYNQGPPWT	16	/	/	/	/	/	/	/	/
p-HD16-112*	3-74	4	ETIDWASSGPDGY	IgG2	20	κ	1-12	5	QQAKSFPPT	16								
p-HD16-113	3-33	5	AGVPVSTLVEHSYGWGWFDT	IgG1	27	κ	1-17	4	LQHDSYPPT	10	/	/	/	/	/	/	/	/
p-HD16-140*	3-21	6	DPSGVRTTIMVYAVTSYYCGMDV	IgG2	19	κ	2-28	3	MQALQTLFT	7								
p-HD16-170	3-23	5	KEGRISGGTIEDDS	IgG1	16	κ	1-17	1	LQHHDYRT	7	/	/	/	/	/	/	/	/
p-HD16-211	4-39	1	DRSRYYQDSSGYFPY	IgG3	22	κ	1-5	2	QHYNSYSHT	2	X	X	X	X	/	c/n	/	X
p-HD16-268*	4-59	5	DRGDLVVAGRYGILDS	IgG1	27	κ	4-1	2	QHYNAAPHT	24								
p-HD16-277	5-51	4	EPDYYQTGSSSIVNY	IgG1	45	κ	1-39	2	QESYRTPYS	16	/	/	/	/	/	/	/	/
p-HD16-310	3-53	4	DRQVWAPQGLDL	IgG1	41	κ	4-1	2	QQYFDIPYT	22	/	/	/	/	/	c	/	/
p-HD16-316*	3-23	5	GSFLEWFLSGGWFDP	IgG1	20	κ	1-39	2	QQSYSTPYT	20								

Table S1. Cont.

	Heavy						Light				Reactivity							
Ig	VH	JH	CDR3 (aa)	Isotype	V-mut number	VL isotype	Vκ/λ	Jκ/λ	CDR3 (aa)	V-mut number	ssDNA	dsDNA	LPS	Insulin	HEp-2 ELISA	HEp-2 IFA	Pneumoc.	Influenza
p-HD16-319	3-74	4/5	DLSGAKDN	IgG2	31	κ	2-28	2	MQGLQTPYT	13	/	/	/	/	/	/	/	/
p-HD16-321	1-69	6	GGAYCSVTNCVDELAYSFAMDV	IgG1	26	κ	3-15	1	QQYKDWPPWT	10	/	/	/	/	/	/	/	/
p-HD16-330	3-66	6	TYYESIRGSFAYYYYAMDV	IgG1	23	κ	3-20	1	QHYARASWT	9	/	/	/	/	/	/	/	/
p-HD16-331	4-59	4	DGRAGRPYFDQ	IgG1	32	κ	3-20	1	QQYGRPPAT	16	/	/	/	/	/	c	/	/
p-HD16-333*	4-4	5	ETPKSDNSGYYYVWLDP	IgG1	25	κ	1-5	1	QQYYIDWT	14								
p-HD16-341	1-69	4	VWFGESVSEGSAHFGFDY	IgG1	25	κ	1-5	5	QQYDSLPPAIT	18	/	/	/	/	/	/	/	/
p-HD16-353	3-11	4	QGPLVGPRRYFDS	IgG1	22	κ	1-39	1	QQSSSDPWT	22	/	/	/	/	/	/	/	/
p-HD16-379	3-23	3	QFVDI	IgG1	27	κ	1-5	1	HQYYAYPWT	12	/	/	/	/	/	/	/	/
p-HD16-382	3-49	4	DPMGVNYVIY	IgG1	12	κ	1-5	2	QQYDNVPYT	12	/	/	/	/	/	/	/	/
p-HD16-387*	4-59	4/5	TEYSSGWFDD	IgG1	40	κ	3-15	1	QQYFDWPRGT	16								
p-HD16-394	1-69	4	GDQEFESGPFDL	IgG1	40	κ	3-15	2	QQYNNWPPGT	6	/	/	/	/	/	/	/	/
p-HD16-401*	1-2	4	QHDTNGNCLFDQ	IgG1	18	κ	4-1	1	QQYYVTPWT	17								
p-HD16-403*	4-59	4	QNRREGYNNLFYFDH	IgG1	33	κ	1-39	2	QQTFTTPFT	34								
p-HD16-408*	3-30	4	DHYQLPAGLFED	IgG1	55	κ	1-5	2	QQYXRRPPYN	36								
p-HD16-414	4-59	2	ETPAVSGSRYWFYDL	IgG2	35	κ	1-12	4	QQGDSFPLT	21	/	/	/	/	/	c/n	/	/
p-HD16-442	3-53	3	DHGYNTPSRSANDALDV	IgG3	36	κ	3-20	1	QEGRT	35	/	/	/	/	/	/	/	/
p-HD16-464	4-59	5	EKAAAGTIGWFDP	IgG1	36	κ	1-12	2	QQGKTVPFS	25	/	/	/	/	/	/	/	/
p-HD16-482	1-2	6	KEIFDYDIALDV	IgG1	20	κ	3-20	1	QQYGSSPWT	1	/	/	/	/	/	/	/	/
p-HD16-487	4-59	4/5	ADGVALVSR	IgG1	34	κ	3-20	2	QQYASLPYT	15	/	/	/	/	/	/	/	/
p-HD16-6*	3-11	2	DRKGALPGGDFDL	IgG2	38	λ	2-14	3	NCFTRRNIWV	27								
p-HD16-22	4-39	4/5	GGAMAPFR	IgG2	41	λ	3-27	3	YSATHNFWV	26	/	/	/	/	/	/	/	/
p-HD16-29*	4-59	5	IADFWSDFARFDS	IgG2	34	λ	1-44	3	SSWEESLHGWV	14								
p-HD16-33	4-59	4	HFTQGPHNYFDA	IgG1	31	λ	3-1	3	QSWDGDKIV	23	/	/	/	/	/	/	/	/
p-HD16-45*	3-23	5	DRFGGGNWIES	IgG1	37	λ	1-44	1	AAWDDRLNAYV	25								
p-HD16-50	3-48	4	VAATGGSRFFDY	IgG1	5	λ	1-40	3	QSYDNELSGWV	31	/	/	/	/	/	/	/	/
p-HD16-67						λ	2-11	1	SSYAGRFI	31	/	/	/	/	/	/	/	/
p-HD16-72	4-39	4	EGYSTYFDS	IgG1	13	λ	2-18	3	SSYTSRSTLV	4	/	/	/	/	/	/	/	/
p-HD16-75*	3-48	6	GGRGDAMDV	IgG2	24	λ	2-14	1	SSYRRTTNVEV	26								
p-HD16-93	5-51	6	PGGHDVSGLCYTKNYYYYGMDV	IgG1	19	λ	1-44	3	ATWDDSLIGRGV	7	/	/	/	/	/	/	/	X
p-HD16-94*	3-15	4	PNWNGVRNPFDY	IgG2	25	λ	3-21	1	QVWDSGSDHPYV	19								
p-HD16-117	3-15	4	AGGVYYDESGYYDYFDY	IgG1	10	λ	1-51	1	VTWDSSLRAFV	11	/	/	/	/	/	c	/	/
p-HD16-145	3-21	5	DGWVGPTTEILSDS	IgG1	28	λ	1-47	1	ASWDDSLSGYV	15	/	/	/	/	/	c	/	/
p-HD16-176	3-11	4	ADGAGPGGHFDY	IgG2	20	λ	1-47	3	TAWDNSVNGRV	19	/	/	/	/	/	/	/	/
p-HD16-206*	5-51	5	EGTSGFDS	IgG1	19	λ	3-21	3	QVWDINSDHRV	20								
p-HD16-267*	4-59	6	VGCTTINCYAGYHWFALDV	IgG3	40	λ	1-40	2	QAFDMWFRGPV	40								
p-HD16-314	4-31	4	ARLTVMIGSQWGASPNYFDS	IgG1	50	λ	2-11	3	CSFSATDTWV	23	X	X	X	X	X	c	/	/
p-HD16-325	1-46	6	AFSTGTPATGGMDV	IgG1	34	λ	1-40	1	QSYDYMLSGSYV	6	/	/	/	/	/	n	/	/
p-HD16-337*	3-21		DVLTGTYLAYFDY	IgG1	29	λ	1-40	3	QSYDNIVKTWV	9								
p-HD16-340	3-23	5	WSSAWFVSPDNWFDP	IgG1	15	λ	1-44	3	AAWDDSLDGPWV	12	/	/	/	/	/	/	/	/
p-HD16-366*	4-59	6	ERVYVSGSGRRYGMDV	IgG2	22	λ	2-14	3	NSYATYSTLEV	7								
p-HD16-369	5-51	3	PSRRVGAEDPDAYDI	IgG1	34	λ	1-44	2	AAWDDSLTGVV	12	/	/	/	/	/	/	/	/
p-HD16-381*	4-59	5	EQGGSGTYGWFDP	IgG1	17	λ	2-23	1	CSYAGIGTYV	8								
p-HD16-384	3-23	6	EIVNSYGTLYSNGMDV	IgG1	10	λ	2-8	3	SSYAGSNNFGV	4	/	/	/	/	/	/	/	/

Table S1. Cont.

	Heavy						Light				Reactivity							
Ig	VH	JH	CDR3 (aa)	Isotype	V-mut number	VL isotype	Vκ/λ	Jκ/λ	CDR3 (aa)	V-mut number	ssDNA	dsDNA	LPS	Insulin	HEp-2 ELISA	HEp-2 IFA	Pneumoc.	Influenza
p-HD16-395	1-2	5	DRTDYYDSNAYYPNWLDP	IgG2	24	λ	2-8	3	SSYGGSQNLV	13	/	/	/	/	/	/	/	/
p-HD16-450	3-23	4	DFGYNFAFLDF	IgG1	20	λ	1-51	2	VTWDSSLSVVL	10	/	/	/	/	/	/	/	/
p-HD16-454	1-69	4	GEFDINDVEGLGLKFED	IgG1	22	λ	2-27	3	CSFAGRSTWV	8	/	/	/	/	/	/	/	/
p-HD16-456	1-18	6	VGLRTVDYYYAMDV	IgG1	32	λ	2-14	3	TSYSNSRPVV	20	/	/	/	/	/	/	/	/
p-HD16-479	1-69	5	HPEGIAFDL	IgG1	46	λ	1-44	3	ATWDGPLSGWV	21	/	/	/	/	/	/	/	/
p-HD20-11	3-23	4	DFSYSGYYHFDC	IgG1	33	κ	1-5	2	QEYNRKPYS	27	X	X	X	X	X	c	/	/
p-HD20-13	3-11	6	EARVRYMDV	IgG2	16	κ	3-20	1	QQYSSTPRT	5	/	/	/	/	/	c	/	/
p-HD20-18	3-23	4	DIVRKDRIRRKPYYFDS	IgG1	24	κ	3-20	4	QQYGNSPGLT	12	/	/	/	/	/	n	/	/
p-HD20-32	4-39	4	PSGYNYY	IgG2	30	κ	3-20	2	QQYGSVPST	10	X	X	X	X	X	c	X	X
p-HD20-39*	3-30	5	GRSPSPADYIMAP	IgG2	16	κ	4-1	5	QQYYSAPIT	15								
p-HD20-40	3-23	2	DVTSYFWYFDL	IgG2	10	κ	4-1	2	QQYLTTGMNT	10	X	X	X	/	X	c	/	/
p-HD20-44	4-39	3	DRDDDVWGNYRYSAFDM	IgG1	23	κ	1-5	2	QQYYSYST	12	/	/	/	/	/	/	/	/
p-HD20-45	3-9	6	AGGWRYGMDV	IgG2	11	κ	3-20	1	QQYGSSPRT	3	/	/	/	/	/	/	/	/
p-HD20-56*	3-72	4	RPRGTAMPGDY	IgG2	20	κ	1-9	4	QQLNSYPLT	10								
p-HD20-68*	3-23	4	ERNIVSTAIDY	IgG1	21	κ	1-5	4	QQYSIYSS	10								
p-HD20-70	1-2	4	SWGATKHPFDF	IgG1	24	κ	3-20	4	QQYDSSVT	13	/	/	/	/	/	/	/	/
p-HD20-73	4-59	4	DLSGDYYFDS	IgG1	23	κ	4-1	2	QQYYSAPYT	10	/	/	/	/	/	/	/	/
p-HD20-74κ*	4-34	6	DPCDTSSCYDGLFGKRPARGMDV	IgG1	25	κ	1-33	5	QQYDNLPLIT	13								
p-HD20-90*	4-31	4	AVPAKTMGILDEYYFDY	IgG1	28	κ	1-39	4	QQSYGPPLT	27								
p-HD20-105	1-69	6	GSYDSGGYYHYYFYHMDV	IgG1	26	κ	2-28	5	MQALQTPLIT	6	X	X	X	X	X	/	X	/
p-HD20-110*	4-31	4	VSREDYDSSGYIDY	IgG1	19	κ	1-39	4	QQSYRTPLT	16								
p-HD20-117	3-23	3	DRVPIVDINHAGAFDI	IgG1	23	κ	1-39	1	QQSFTTRWT	14	/	/	/	/	/	/	/	X
p-HD20-122	3-9	2	GPGYAIGKRYFDL	IgG2	17	κ	3-20	4	QQYGSSLT	7	/	/	/	/	/	/	/	/
p-HD20-125	1-18	4	GSSVPAAGDH	IgG2	22	κ	2-30	3	VQGTHRPPT	8	/	/	/	/	/	/	/	/
p-HD20-132	3-9	2	GPGYAIGKRYLDL	IgG2	22	κ	3-20	4	QQYGSSLT	9	/	/	/	/	/	/	/	/
p-HD20-137	3-48	4	DLWERATDY	IgG1	22	κ	3-20	3	QQYGSSL	7	/	/	/	/	/	/	/	/
p-HD20-140κ	3-7	4	ERSEKTGWEGSIY	IgG2	4	κ	4-1	1	QQYYSTPRT	0	/	/	/	/	/	/	/	/
p-HD20-145	1-2	5	FLGYNSERRLDS	IgG2	17	κ	1-9	4	HQVNSYT	2	/	/	/	/	/	/	/	/
p-HD20-163	4-31	4	ESSTGGYDPSHQFDY	IgG1	25	κ	3-11	2	QYRNNWPPMYT	10	/	/	/	/	/	/	/	/
p-HD20-173*	3-11	1	EERFRWTQH	IgG2	11	κ	3-20	1	QQFGSTPRT	6								
p-HD20-175*	4-61	4	ANPTHYYDSGPYYSASRRRGAIQY	IgG1	18	κ	1-6	1	LQDYNYPWT	7								
p-HD20-178	4-4	3	ERRVGARATLAFDI	IgG1	32	κ	1-39	2	QQTYRAHS	23	/	/	/	/	/	/	/	/
p-HD20-183	1-69	3	GGEVPTEVDVFDI	IgG1	15	κ	1-39	2	QQSSSIPYT	9	/	/	/	/	/	/	/	/
p-HD20-192	3-7	5	SVRGSAAGGWP	IgG2	26	κ	2-30	1	MQATYWPWT	12	/	/	/	/	/	/	/	/
p-HD20-210*	1-24	6	EATVTTFGMDV	IgG1	12	κ	3-20	4	HQYSRSPLT	5								
p-HD20-223	3-23	5	TGSGWFNEA	IgG2	18	κ	3-20	4	QYYYTSPLN	6	/	/	/	/	/	/	/	/
p-HD20-238	3-53	4	KTDSSGSGDY	IgG2	4	κ	2-28	1	MQALQTWT	1	/	/	/	/	/	/	/	/
p-HD20-247	3-9	3	AVSGFDDAFDS	IgG1	18	κ	1-39	1	QQSNDTPWT	14	/	/	/	/	/	/	/	/
p-HD20-255	3-74	4	DDLSWYGSIDF	IgG1	25	κ	1-17	2	LQHNNDPHT	10	/	X	X	/	/	/	/	/
p-HD20-259*	3-7	4	VGQVGTTFHY	IgG1	8	κ	1-39	5	QQIYSTLPIT	2								
p-HD20-268	4-31	3	GRTHVSGDYAAFDI	IgG1	11	κ	1-39	4	QQSHSTPPT	7	/	/	/	/	/	/	/	/
p-HD20-274	3-74	4	DHYGSGSYLDY	IgG1	8	κ	1-33	4	QQYDNLPLT	2	/	/	/	/	/	/	/	/
p-HD20-303	4-61	6	TTNIVIIPAGNADV	IgG1	32	κ	1-39	2	QQGYSPPIT	22	/	/	/	/	/	/	/	/

Table S1. Cont.

	Heavy						Light				Reactivity							
Ig	VH	JH	CDR3 (aa)	Isotype	V-mut number	VL isotype	Vκ/λ	Jκ/λ	CDR3 (aa)	V-mut number	ssDNA	dsDNA	LPS	Insulin	HEp-2 ELISA	HEp-2 IFA	Pneumoc.	Influenza
p-HD20-305*	3-7	4	FTRRIQEDY	IgG2	15	κ	2-30	1	VQTIHWPWT	10								
p-HD20-306*	4-31	5	ESRPDRSGYYAFEF	IgG1	29	κ	3-20	1	QQYSSSQWT	2								
p-HD20-14	4-34	4	YFDLQY	IgG2	21	λ	1-44	3	AAWDDSLNGWV	16	/	/	/	/	/	/	/	/
p-HD20-15	1-46	4	DDPRALTGIEY	IgG1	30	λ	1-36	3	AAWDDSLNGWV	9	/	/	/	/	/	/	/	/
p-HD20-34	1-2	4	ETGTTKKFDF	IgG2	20	λ	2-14	1	TSFTSRNTYV	7	/	/	/	/	/	/	/	/
p-HD20-54*	5-51	6	HVNYGYYYGLDV	IgG1	25	λ	1-44	3	AAWDDTLNTWV	18								
p-HD20-66	1-69	6	TPGPSTYGDLYYYFAGMDV	IgG1	17	λ	1-44	3	AAWDDSLNGWV	11	/	/	/	/	X	/	/	/
p-HD20-74λ						λ	1-51	3	GTWDSSLSAGV	8	/	/	/	/	/	/	/	/
p-HD20-119*	3-23	4	GLRQITSAGIDY	IgG1	16	λ	2-14	3	SSYTNNNTWV	7								
p-HD20-131	3-74	3	ETYFHDTDEYYLPRAFDI	IgG1	15	λ	1-44	2	AAWADNLDGVI	8	/	/	/	/	/	/	/	/
p-HD20-140λ						λ	2-14	2	SSYTNKNIVL	26	/	/	/	/	X	/	/	/
p-HD20-150	3-15	4	GDAVPGVISDY	IgG2	11	λ	1-44	1	ASWDDSLNGLV	6	/	/	/	/	X	/	/	/
p-HD20-154	1-46	6	DRDARMAVYYYYGMDV	IgG3	28	λ	1-51	2	ETWDSSLSSVI	7	/	/	/	/	X	/	/	/
p-HD20-164	3-48	3	GGYCSGTNCYADDAFDM	IgG1	18	λ	1-44	2	AVWDDSLNGPA	10	/	/	/	/	/	c	/	/
p-HD20-186	3-48	4	TSPIGYYYYFDY	IgG1	21	λ	2-14	1	SSYTANRTPV	9	/	/	/	/	X	/	/	/
p-HD20-194	1-69	6	AVRTVTRLRGGAMHYFYGMDV	IgG1	23	λ	2-14	3	SSYTSSSTQV	11	X	X	X	X	X	c	/	/
p-HD20-220	1-69	4	ESASLVAGRGIQYYFDY	IgG1	38	λ	1-40	2	QSYDNRLSGFVI	11	/	/	/	/	X	/	/	X
p-HD20-262*	3-33	6	EGPRLSIFGIYYAMNV	IgG1	25	λ	2-18	3	TSFTTTNTWV	10								
p-HD20-273	4-4	5	DDLADGGGRNWFDP	IgG2	33	λ	1-44	3	SAWEDSPTAYWV	14	/	/	/	/	/	/	/	/
p-HD20-285*	1-2	6	AGPVINLYYYFALDV	IgG1	19	λ	1-47	3	AAWDDSLSDPWV	11								
p-HD20-292	4-61	5	DHLIVVVPAAMSRVGGFGEL FPGWFDP	IgG1	4	λ	1-51	2	GTWDNSLRGVV	2	X	X	X	/	X	c	/	/
p-HD20-312	3-48	4	DNEIYCGNDCYFYFDH	IgG1	23	λ	1-44	1	AAWDDSLNGYV	13	/	/	/	/	/	/	/	/
p-HD20-313	6-1	6	DPGSDQGLDV	IgG2	25	λ	1-51	3	GTWDSSLSAGV	2	/	/	/	/	/	/	/	/
p-HD21-18	4-4	4	HMTVSGTRGFDN	IgG2	50	κ	3-20	2	QQYSTLYPRYS	27								
p-HD21-31	3-23	4	APPHCSGGSCSIDS	IgG2	5	κ	2-30	2	MQGTHGGT	2	/	/	/	/	/	/	/	/
p-HD21-32	3-30	3	GVSDYDTANNRLGEGDVFDM	IgG1	28	κ	1-9	3	QQVNTYPVT	11	X	X	X	X	X	c	/	/
p-HD21-46	4-59	3	GGSCSGESCAATIWYDAFDI	IgG1	23	κ	1-5	2	QQYMSYNS	16	/	/	/	/	/	/	/	/
p-HD21-50	4-31	3	DCSSRDCLTTSYAQQGLGT	IgG1	48	κ	4-1	1	HQYYYTPRT	21	/	/	/	/	/	/	/	/
p-HD21-56	3-15	6	SNCGKDCSYFYYYYMDV	IgG1	19	κ	1-39	3	QQSYSMPFT	21	/	/	/	/	/	/	/	/
p-HD21-63	3-7	4	GGAHRYSHYY	IgG1	32	κ	1-9	4	QQVNNYPLT	8	/	/	/	/	/	/	/	/
p-HD21-79κ	1-3	4	HGPPTYYFDF	IgG1	28	κ	3-20	2	HYYLGSPYS	19	/	/	/	/	/	/	/	/
p-HD21-83	3-23	6	DAVHSYLYYYMDV	IgG2	30	κ	3-20	4	QQYITLPLT	19	/	/	/	/	/	/	/	/
p-HD21-102	3-11	4	GVGWCSSTSCYL	IgG2	23	κ	2-30	4	MQGSVWPPT	13	/	/	/	/	/	/	X	/
p-HD21-104	3-15	4	QNTFTTSTDY	IgG2	32	κ	1-16	1	QQYDSFPWT	9	/	/	/	/	X	/	/	/
p-HD21-110	3-43	6	GMAPQTYDYHYMDV	IgG1	23	κ	1-5	4	QHYNTYVT	8	/	/	/	/	X	c	/	/
p-HD21-120	3-23	4	GDPLGRNRWTLDN	IgG1	30	κ	3-15	4	QQYGNWPPLT	12	/	/	/	/	/	/	/	/
p-HD21-121	4-59	4	YDILTGRFDY	IgG1	27	κ	1-39	2	QQGYSTLFT	14	/	/	/	/	/	/	/	/
p-HD21-132*	5-51	4	LQSSSWLHPLEH	IgG1	30	κ	4-1	2	QQYYSLPYT	11								
p-HD21-153	1-69	5	DLVRSISGTT	IgG1	16	κ	2-30	2	MQGTHWPYT	1	/	/	/	/	/	/	/	/
p-HD21-158	3-43	4	SRYFGSGSYFDH	IgG1	35	κ	3-15	2	QQYNTWPPST	23	/	/	/	/	/	/	/	/
p-HD21-159	3-49	4	PYRLDGSDAYFHY	IgG1	16	κ	2-28	2	MQVLQTPYT	6	/	/	/	/	/	/	/	/
p-HD21-164	4-4	5	HMTVLGTRGFDN	IgG2	30	κ	3-20	2	QQYTSSPPGYT	6	/	/	/	/	/	/	/	/

Table S1. Cont.

	Heavy						Light				Reactivity							
Ig	VH	JH	CDR3 (aa)	Isotype	V-mut number	VL isotype	Vκ/λ	Jκ/λ	CDR3 (aa)	V-mut number	ssDNA	dsDNA	LPS	Insulin	HEp-2 ELISA	HEp-2 IFA	Pneumoc.	Influenza
p-HD21-175	3-33	4	DRHPGVGAFNYFDS	IgG1	14	κ	3-15	1	QHYNNWPPT	9	/	/	/	/	/	/	/	X
p-HD21-177*	3-11	4	HIVGVHCFDH	IgG2	33	κ	2-29	1	MQGLHLPWT	22								
p-HD21-180	3-7	4	DGYYGSGSPFAY	IgG2	11	κ	1-16	4	QQYHTYPPT	12	/	/	/	/	/	/	/	/
p-HD21-191	3-23	2	GDGTYYHWYFDL	IgG1	26	κ	1-39	4	QQSYNTPIT	24	/	/	/	/	/	/	/	/
p-HD21-205	3-23	1	GSDTRDFHYGLLH	IgG2	21	κ	3-15	2	QQYYHWPPSMYT	14	/	/	/	/	/	/	/	/
p-HD21-209	3-74	3	LLTFRGISV	IgG2	29	κ	2-30	2	VQGSQWPHT	14	/	/	/	/	/	/	/	/
p-HD21-232	4-39	4	QRAGGYSGYGPFDS	IgG1	29	κ	3-20	5	QQYGSSPIT	12	/	/	/	/	/	/	/	/
p-HD21-235	1-69	1	ERGYCDRTGCHEGYFHN	IgG1	32	κ	1-13	5	QEFSDYPTVT	19	/	/	/	/	/	/	/	/
p-HD21-243	3-15	4	GSPSGPVWWDAY	IgG2	23	κ	3-15	5	QQYDHWPPIT	8	/	/	/	/	/	c	/	/
p-HD21-244	3-74	4	GRGWLHDY	IgG2	21	κ	3-20	5	QQYADSPIT	16	/	/	/	/	X	c	/	/
p-HD21-249	3-49	3	GDDFLSEALDI	IgG1	39	λ	3-15	2	QQYSHWPT	20	/	/	/	/	/	/	/	/
p-HD21-255	4-61	4	GRYGVEPPGIDY	IgG2	21	λ	4-1	1	QQFYSTPPT	11	/	/	/	/	/	/	/	/
p-HD21-6	4-4	4	HGSDPCITTTCRPLEF	IgG2	17	λ	2-23	3	CTFTNSDTAHWV	15	/	/	/	/	/	/	/	/
p-HD21-8	4-39	5	DYIVIGSASSYNWFGP	IgG2	28	λ	1-44	2/3	AAWDDILNGPV	14	/	/	/	/	/	/	/	/
p-HD21-22	4-4	5	VGPDVTTPTTGASLDP	IgG2	19	λ	2-23	1	CSYAGSSTHYV	4	/	/	/	/	/	/	/	/
p-HD21-33	1-8	1	SGYSGYHLLR	IgG2	31	λ	1-44	1	AAWDVELNVYV	15	/	/	/	/	/	/	/	/
p-HD21-36	5-51	4	HTPVDMATEPINFDY	IgG1	9	λ	1-47	3	VSWDDSLSGPV	10	/	/	/	/	/	/	/	X
p-HD21-77	1-69	6	VSPTSRYYFYYYYMDV	IgG1	53	λ	2-8	2	ASFAGRNDVL	28	/	/	/	/	/	/	/	/
p-HD21-79λ						λ	1-47	2	AAWDDSLNGHVV	9	/	/	/	/	/	/	/	/
p-HD21-88	4-31	5	DLRNPLYYYDTSAYPGGWFDP	IgG1	26	λ	2-23	1	CSYAGNSYL	15	/	/	/	/	/	/	/	/
p-HD21-92	4-4b	4	LNSGNFHFDY	IgG1	16	λ	2-14	3	TSYRRDGTLV	11	/	/	/	/	X	c	/	/
p-HD21-96	3-74	4	DGDRWNFDF	IgG2	27	λ	2-14	3	SSYTTSITWV	16	/	/	/	/	/	/	/	/
p-HD21-129	3-9	6	AVYSTGGAPDV	IgG2	38	λ	1-47	3	ASWDDSLSGGV	21	/	/	/	/	/	/	/	/
p-HD21-202*	3-74	4	GADSPGVDH	IgG2	31	λ	2-8	3	SSYGGTL	25								
p-HD21-212	4-39	6	LTLYYYIDV	IgG1	36	λ	V1-27P	3	STWDDSVSAGV	18	/	/	/	/	X	/	/	/
p-HD21-214	3-23	4	DAMSTGGLQY	IgG2	43	λ	1-51	3	GTVDSTLKVGM	18	/	/	/	/	/	/	/	/
p-HD21-226	3-74	4	ECDAYNTKYDLDH	IgG1	13	λ	1-40	2	QSYDSSLSVV	6	/	/	/	/	/	/	/	/
p-HD21-229	1-69	4	ESPDEFRSAWGY	IgG2	28	λ	1-40	2	QSYDSTLSGVI	11	/	/	/	/	/	/	/	/
p-HD21-242	3-7	6	EGGYCYTTTCNYYYYYMDV	ND	4	λ	1-36	2	ATWDDSLNGVV	2	/	/	/	/	/	/	/	/
p-HD21-246	3-64	4	EGLSRRTQFDY	IgG2	31	λ	1-51	2/3	GTWDSSLLAGV	19	/	/	/	/	X	c	/	/

p, plasma cell; HD, healthy donor; CDR3, complementarity determining region 3; aa, amino acid; IFA, indirect immunofluorescence assay; ND, not determined; c, cytoplasmic; n, nuclear; X, reactive; /, nonreactive; pneumoc., pneumococcal.

*Antibody not expressed.