SUPPLEMENTAL FIGURES

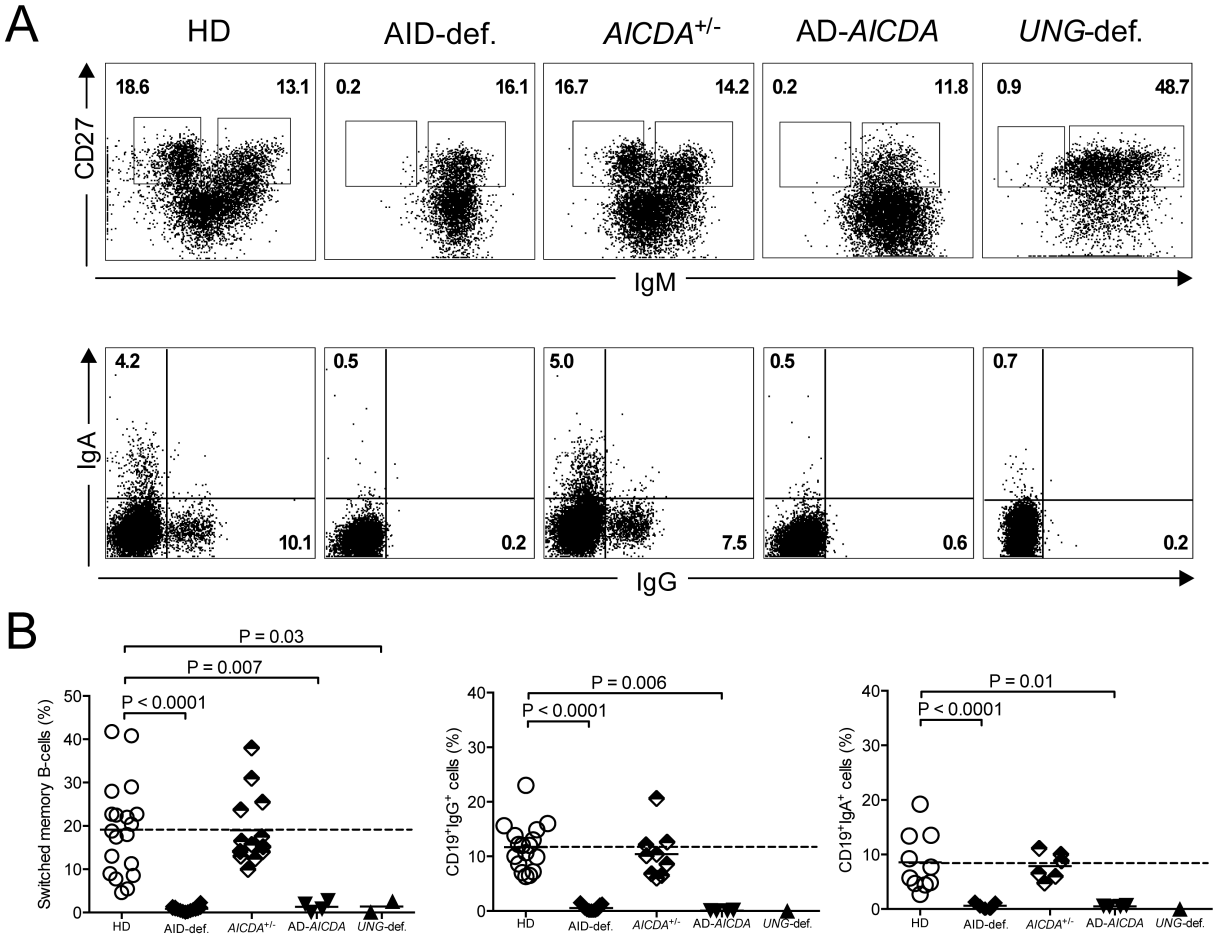

Figure S1, related to Figure 1. Absence of class-switched memory B cells in AD-*AICDA* and *UNG*-deficient patients resembles that in AID-deficient patients. (A) Representative dot plots for CD27 and IgM (upper row) or IgG and IgA (lower row) staining on purified $CD20^+$ B cells. (B) Summary of the data shows absence of switched B cells in autosomal recessive *AICDA*-deficient (AID-def.) patients (n=17), autosomal dominant (AD)-*AICDA* patients (n=4) and *UNG*-deficient (*UNG*-def) patients (n=2), compared to healthy donors (HD, n=20) and asymptomatic healthy heterozygotes ($AICDA^{+/-}$, n=13).

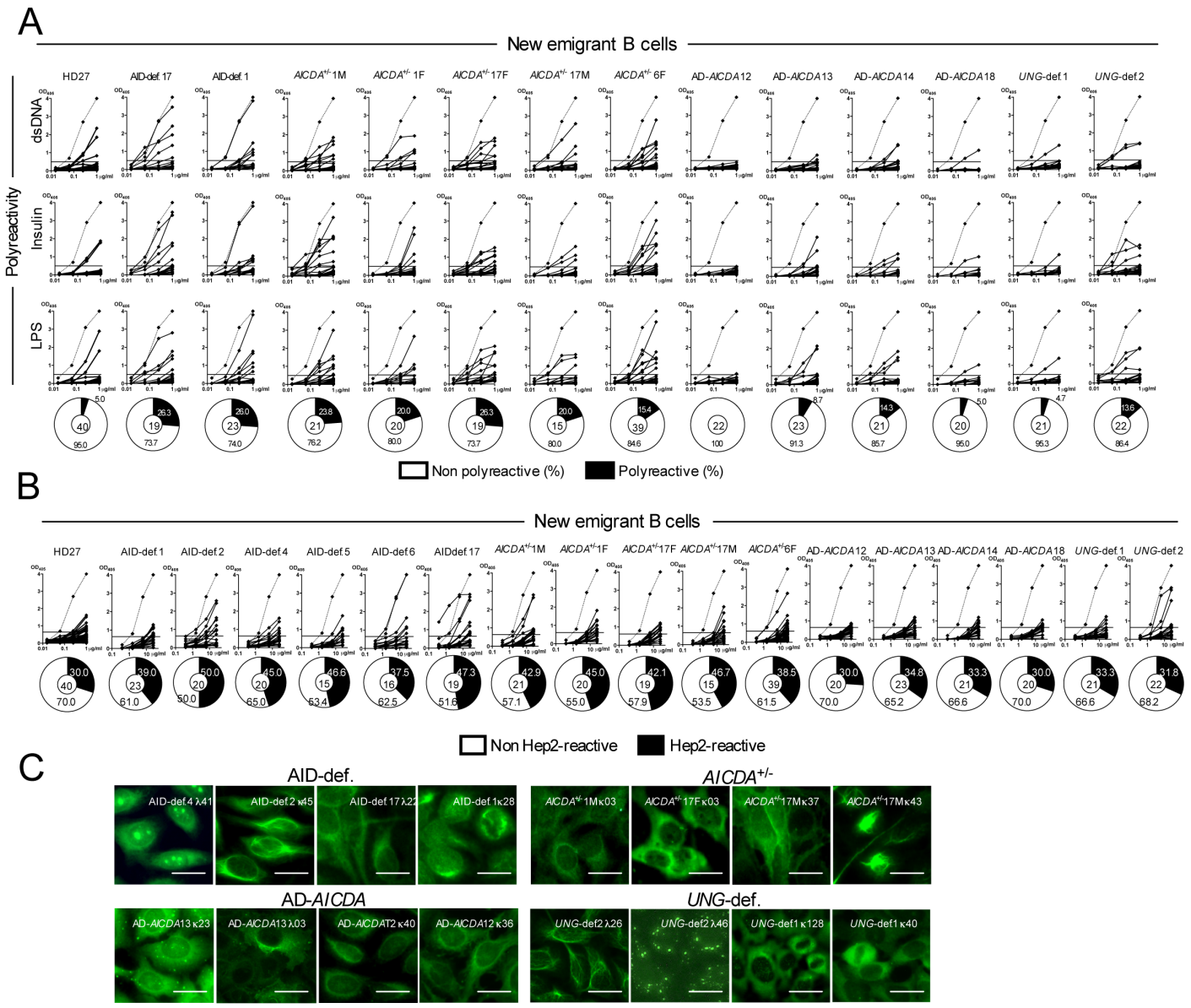

Figure S2, related to Figure 1. Increased frequencies of autoreactive new emigrant B cells in AID-def. patients and *AICDA*$^{+/-}$ healthy carriers. Recombinant antibodies expressed by CD19^{+}CD21^{lo}CD10^{+}IgM^{hi}CD27^{-} new emigrant B cells from AID-def. patients, asymptomatic healthy heterozygotes (*AICDA*$^{+/-}$), AD-*AICDA* and *UNG*-def. patients were tested by ELISA for polyreactivity against dsDNA, insulin and LPS (A) or HEp-2 reactivity (B). Solid lines show binding for each cloned recombinant antibody. Dotted lines show ED38-positive control. Horizontal lines show cutoff OD405 for positive

reactivity. Antibodies were considered polyreactive when they recognized all three antigens. For each individual, the frequency of polyreactive or HEp-2-reactive B cells are summarized in pie charts, with the number of antibodies tested shown in the center. (C) Autoreactive antibodies show various patterns of HEp-2 staining. Original magnification 40X, scale bar: 10 μm. Please see also Figure 1.

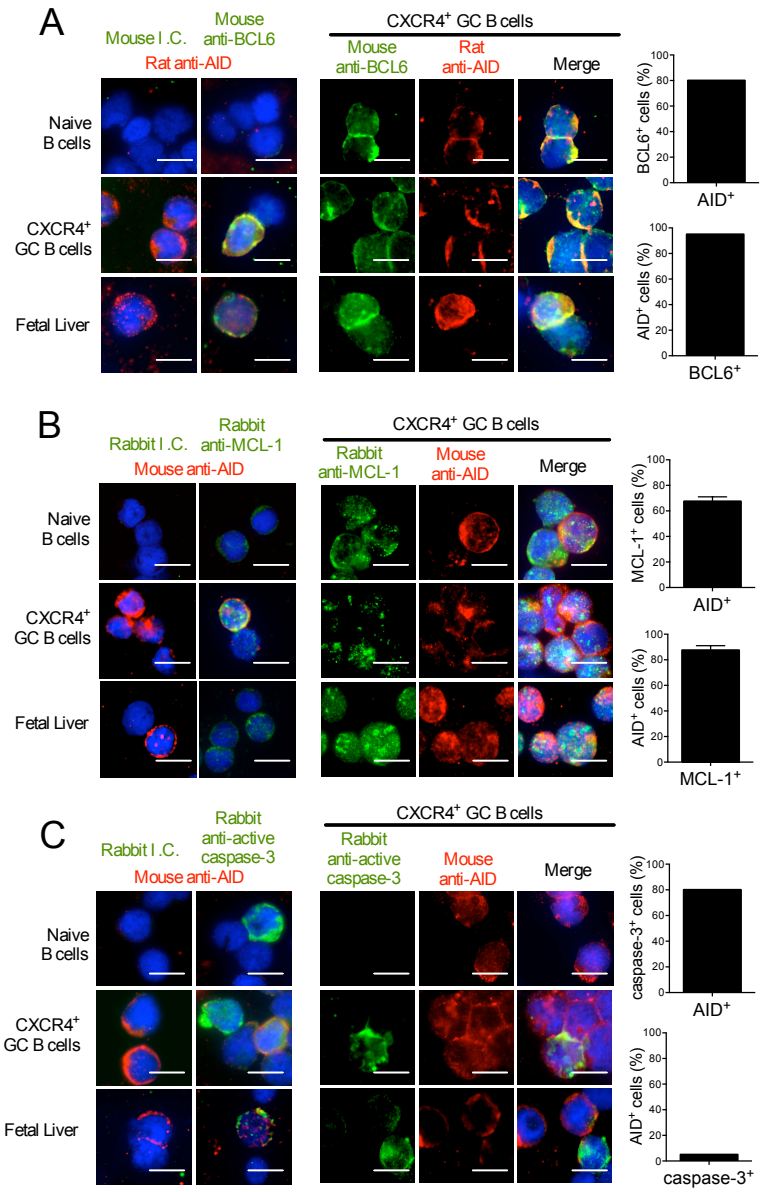

Figure S3, related to Figure 5. Assessment of anti-BCL6, anti-MCL-1 and anti-active caspase-3 antibody specificity. Cytospin slides of sorted $CD19^+IgD^+CD38^-CXCR4^-$ naïve B cells, $CD19^+IgD^-CD38^+CXCR4^+$ GC B cells and $CD34^-CD19^+$ fetal liver B cells were stained for (A) BCL-6, (B) MCL-1, (C) activated caspase-3 or concentration matched isotype control (green) and AID (red) and co-staining was quantified. Data is representative of 2 independent experiments. Original magnification 40X, scale bar: 10 μm, Please see also Figure 5.

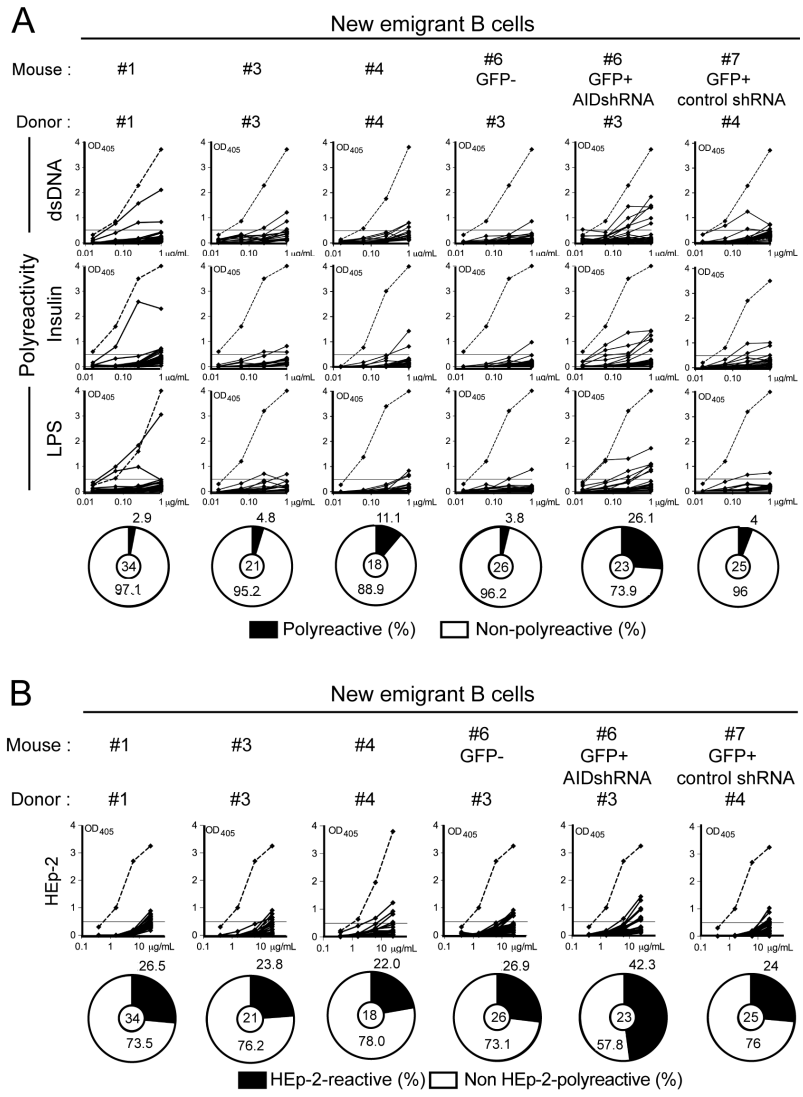

Figure S4, related to Figures 6 and 7. Central B-cell tolerance requires B-cell intrinsic AID expression. Antibodies from new emigrant B cells isolated from control humanized mice and sorted GFP- as well as GFP+ fractions expressing AID shRNA or control shRNA were tested by ELISA for reactivity against dsDNA, insulin and LPS (A) and HEp-2 cell lysates (B). Polyreactive antibodies reacted against all 3 antigens. Dotted lines show ED38-positive control. Horizontal lines show cutoff OD405 for positive reactivity. For each mouse, the frequency of reactive and non-reactive clones is summarized in pie charts, with the number of antibodies tested indicated in the center. Please see also Figures 6 and Figure 7.

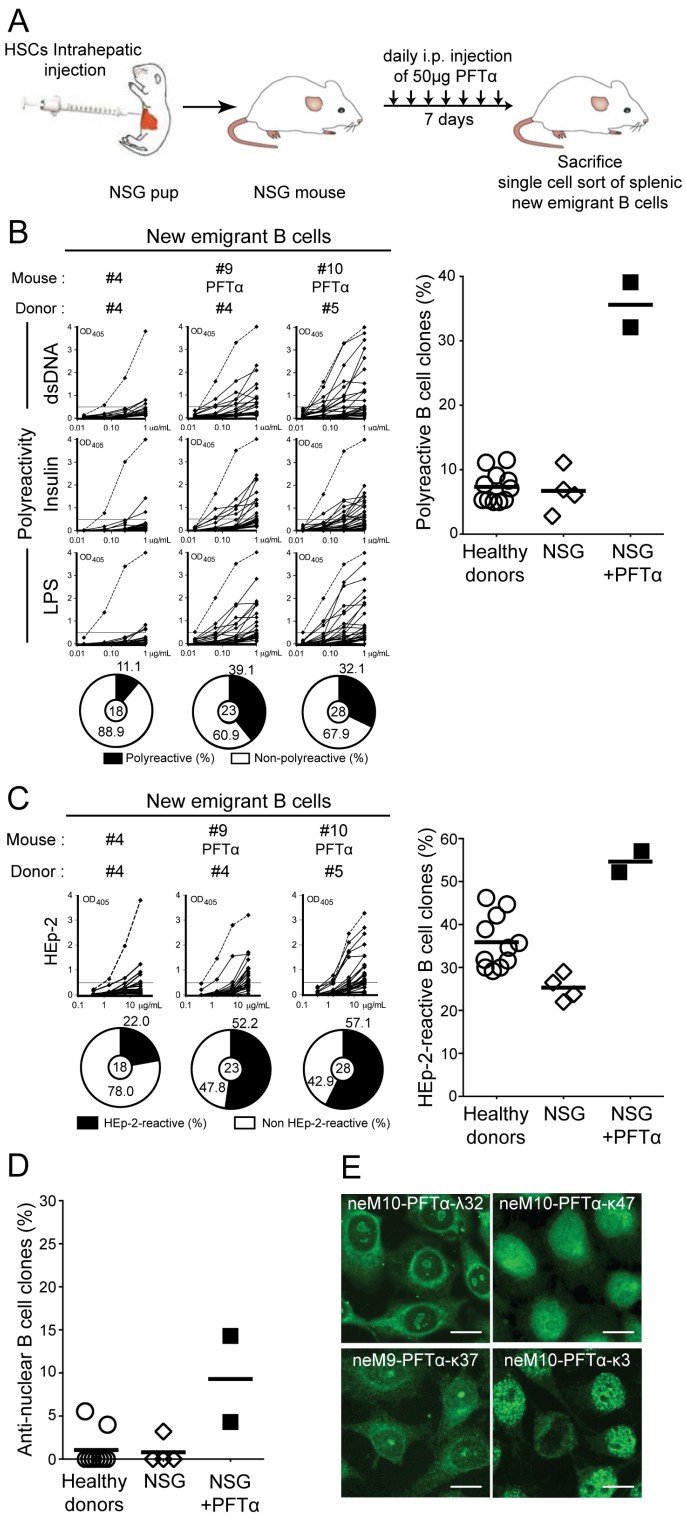

Figure S5, related to Figures 6 and 7. Defective central B-cell tolerance in PFTα-treated mice. (A) Schematic diagram depicting PFTα injections in NSG humanized

mice. $CD34^+$ hematopoietic stem cells (HSCs) were injected in recipients NOD.Cg-Prkdcscid Il2rgtm1Wjl/SzJ mice. Before sacrifice mice were injected with 50µg of PFTα daily for 7 days. Antibodies from new emigrant B cells isolated from one control and two PFTα-treated humanized NSG mice were tested by ELISA for polyreactivity (B) and HEp2-reactivity (C). Dotted lines show ED38-positive control. Horizontal lines show cutoff OD405 for positive reactivity. For each mouse, the frequency of reactive and non-reactive clones is summarized in pie charts, with the number of antibodies tested indicated in the center. Polyreactive antibodies reacted against all 3 antigens (dsDNA, insulin and LPS). The frequencies of polyreactive or HEp2-reactive new emigrant B cells in healthy donors and humanized mice treated or not with PFTα are summarized in the right panels. (D) The frequencies of anti-nuclear new emigrant B cells are compared between healthy donors and humanized mice treated or not with PFTα. (E) Anti-nuclear antibodies expressed by new emigrant B cells isolated from the PFTα-treated mice show various chromatin reactive and non-reactive nuclear reactivity. Original magnification 40X, scale bar 10µm. Please see also Figures 6 and Figure 7.

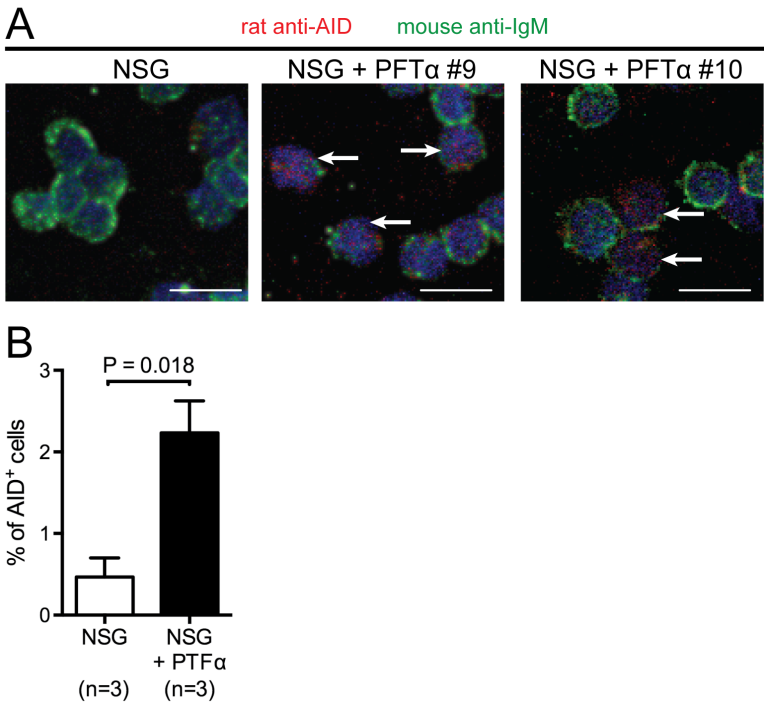

Figure S6, related to Figures 6 and 7. **Increased frequency of AID$^+$ bone marrow B cells in PFTα-treated mice.** (A) Cytospin slides of CD19$^+$ purified bone marrow cells were stained for IgM (green) and AID (red) and quantified for co-staining. White arrows show IgM$^+$AID$^+$ cells. Data are representative of 3 controls and 3 PFTα-treated mice. Original magnification 40X. scale bar 50μm (B) 300 CD19$^+$ B cells (on 3 distinct fields) were analyzed for IgM and AID co-staining in control and PFTα-treated NSG humanized mice. Please see also Figures 6 and Figure 7.

Table S1, related to Figure 1. Characteristics of patients with *AICDA* or *UNG* mutations and heterozygote asympt

Patient number	Ethnic group	Sex	Age at diagnosis (yr)	Current age (yr)	Serum immunoglobins in mg/dl			Clinical Manifestations	Mutation in AICDA gene	Mutation in AID	Inheritance
					IgM	IgA	IgG				
AID-def.1*	Morrocan	M	5	22	240	<7	40	lymphiod hyperplasia, recurrent infections	203G>A / 175-184 del	W68X / H25-E58 del insV	AR
AID-def.2*	Morrocan	M	1	16	150	<7	<6	recurrent infections	203G>A / 175-184 del	W68X / H25-E58 del insV	AR
AID-def.4	Morrocan	M	1	20	100	<7	<6	lymphoid hyperplasia, recurrent infections	203G>A / del	W68X / 0	AR
AID-def.5	Turkish	M	11	21	1150	<5.8	264	lymphoid hyperplasia, recurrent infections	415A>G / 415A>G	M139V / M139V	AR
AID-def.6	Pakistani	M	4	4	4000	<7	<7	recurrent infections	394G>C / 394G>C	A132P / A132P	AR
AID-def.8	French Canadian	F	28	60	8830	<60	na	lymphoid hyperplasia, recurrent infections	334C>T / 334C>T	R112C / R112C	AR
AID-def.9	French Canadian	F	5	26	451	<30	178	lymphoid hyperplasia, recurrent infections	334C>T / 334C>T	R112C / R112C	AR
AID-def.10	French Canadian	F	3	22	621	40	60	recurrent infections	334C>T / 334C>T	R112C / R112C	AR
AID-def.11	French Canadian	M	2	50	6800	<60	na	recurrent infections	334C>T / 334C>T	R112C / R112C	AR
AID-def.17	Turkish	M		18					415A>G / 415 A>G	M139V / M139V	AR
AID-def.19	Kuwait	M	1	5	223	< 6	< 33	lymphoid hyperplasia, recurrent infections	254G>A / 254G>A	S85N / S85N	AR
AID-def.20	Kuweit	M	1.5	16	408	40	<30	lymphoid hyperplasia, recurrent infections	254G>A / 254G>A	S85N / S85N	AR
AID-def.22*	Kuweit	M	3	14	1800	< 7	< 7	lymphoid hyperplasia, recurrent infections	254G>A / 254G>A	S85N / S85N	AR
AID-def.23*	Kuweit	M	8.5	13	677	< 6	< 33	lymphoid hyperplasia, recurrent infections	254G>A / 254G>A	S85N / S85N	AR
AID-def.26	French	M	6	10	140	<7	<7			C87R / C147X	AR
AID-def.27	French Canadian	M							334C>T / 334C>T	R112C / R112C	AR
AD-*AICDA* 12	French	F	71	76	203	<7	130	recurrent infections	568C>T / Normal	R190X / Normal	AD
AD-*AICDA* 13	Japan	M							568C>T / Normal	R190X / Normal	AD
AD-*AICDA* 14	Japan	F		58					568C>T / Normal	R190X / Normal	AD
AD-*AICDA* 18	Turkish	M		17					559del/ Normal	V186X/ Normal	AD
AICDA$^{+/-}$ 1M	Morrocan	F		adult				healthy	203G>A/ Normal	W68X/ Normal	HET
AICDA$^{+/-}$ 1F	Morrocan	M		adult				healthy	175-184 del	H25-E58 del insV/ Normal	HET
AICDA$^{+/-}$ 6F	Pakistani	M		adult				adult	394G>C / Normal	A132P / Normal	HET
AICDA$^{+/-}$ 6M	Pakistani	F		adult				adult	394G>C / Normal	A132P / Normal	HET
AICDA$^{+/-}$ 17F	Turkish	M		adult				healthy	415 A>G/ Normal	M139V/ Normal	HET
AICDA$^{+/-}$ 17M	Turkish	F		adult				healthy	415 A>G/ Normal	M139V/ Normal	HET
AICDA$^{+/-}$ 19F	Kuweit	M		35				healthy	254 G>A/ Normal	S85N/ Normal	HET
AICDA$^{+/-}$ 20F	Kuweit	M		48				healthy	254 G>A/ Normal	S85N/ Normal	HET
AICDA$^{+/-}$ 22M	Kuweit	F		33				healthy	254 G>A/ Normal	S85N/ Normal	HET
AICDA$^{+/-}$ 26M	French	F		41				healthy		C87R/ Normal	HET
AICDA$^{+/-}$ 27B	French Canadian	M		57				healthy	334C>T / Normal	R112C / Normal	HET
AICDA$^{+/-}$ 27S	French Canadian	F		47				healthy	334C>T / Normal	R112C / Normal	HET
UNG-def.1	USA	M	39	40	785	<7	209	lymphoid hyperplasia, recurrent infections	497,498 AT del/497,498 AT del	frameshift	
UNG-def.2	Japan	F	3	12	267	25	<50	HIGM	T822C/T822C	F251S/F251S	
UNG-def.3	French	M	7	26	740	48	50	HIGM	462 C del/639,640 TA del	frameshift	

* siblings

AD: autosomal dominant

HET: heterozygote

Supplementary Table 2, related to Figure 1. Repertoire and reactivity of antibodies from new emigrant B cells of HD30

Ig	HEAVY						LIGHT				REACTIVITY		
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	HEp-2	Staining
neHD30 K3	4-39	5-12	2	4	PSLSGYDYSLDY	12	3-20	3	QQYGSSPLFT	10	-	-	-
neHD30 K4	3-15	/	/	3	GGGVGAFDI	9	2-28	5	MQALQTPT	8	-	-	c
neHD30 K5	3-30-3	1-26	2	6	QSSPTGGGMDV	11	1-5	2	QQYNSYSYT	9	-	+	-
neHD30 K10	4-4	3-9	3	5	VSNHILTGNRLFDP	14	3-20	1	QQYGSSPRT	9	-	+	-
neHD30 K12	1-2	2-15	2	3	HPIGYCSGGSCYGGAFDI	18	1-33	4	QQYDNLPT	8	-	-	-
neHD30 K14	4-34	3-10	3	2	KGTMVRGVIITPHWYFDL	18	2-28	1	MQALQTPQT	9	-	+	-
neHD30 K16	3-30	/	/	6	EGVSHYYYGMDV	12	2-28	4	MQALQTPPT	9	-	-	-
neHD30 K20	3-30	4-17	2	6	DIHRDYGDYETPNYYYYGMDV	21	1-9	1	QQLNSYPLA	9	-	+	-
neHD30 K24	3-72	/	/	6	DNRGMDV	7	4-1	4	QQYYSTPLT	9	-	-	-
neHD30 K26#	1-18	3-16	2	4	NYDYIWGSYFTRGGY	15	1-33	3	QQYDNLPLFT	10			
neHD30 K43	3-9	3-22	2	2	VDSSGLFGWYFDL	13	3-20	1	QQYGSSPQT	9	-	-	-
neHD30 K45#	3-15	2-15	3	4	DPLIVVVVAATRDFDY	16	1-39	2	QQSYSTPYT	9			
	VH	D	RF	JH	CDR3(aa)	Length	Vλ	Jλ	CDR3(aa)	Length	Poly	HEp-2	Staining
neHD30 L7	4-59	/	/	4	DRNFDY	6	3-1	2	QAWDSSTAV	9	-	-	-
neHD30 L11	3-33	/	/	4	GGGGGDY	7	2-14	2	SSFTSITYVV	10	-	-	-
neHD30 L19	3-11	1-7	2	4	DRGNNGRNPYNWNYFFDY	18	2-14	1	SSYTSSSTLLYV	12	-	+	-
neHD30 L21#	3-53	4-17	2	4	VGRYGDYAYTITSRVYYFDY	20	2-14	2	SSYTSSSTLGV	11			
neHD30 L28	3-15	1-26	1	6	AGITKFWELPGYYYYGMDV	19	1-44	3	AAWDDSLNVWV	11	-	-	-
neHD30 L30	3-23	2-21	3	6	GEGGVVVTTQALMDV	15	1-44	2	AAWDDSLNGVV	11	-	-	-
neHD30 L42	1-69	4-4	2	6	SDYSNYVLYDYYYYYGMDV	19	2-8	2	SSYAGSNNLV	10	+	-	-
	VH	D	RF	JH	CDR3(aa)	Length							
neHD30 H2	4-34	3-10	2	4	GQDYYGSGSTADY	13							
neHD30 H29	3-23	6-13	2	4	DEVSSSWLFGY	11							
neHD30 H38	3-72	3-10	1	6	AGSWWFGETRYGMDV	15							
neHD30 H41	3-23	5-12	2	4	VRGRPDSGYRFDY	13							
neHD30 H44	1-69	2-15	2	6	GSYCSGGSCYSSFYYYYGMDV	21							
neHD30 H46	3-21	/	/	6	DDNLPIDYGMDV	12							

RF, reading frame; #, antibody failed to be expressed

-, non-reactive; +, reactive;

c, diffuse cytoplasmic staining; N, nuclear staining; F, cytoplasmic fibers; V, vesicles

Supplementary Table 3, related to Figure 1. Repertoire and reactivity of antibodies from new emigrant B cells of studied human subjects.

Ig	HEAVY						LIGHT				REACTIVITY		
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	HEp-2	Staining
neAID-def.1 K4 #	4-34	2-2	3	4	GSIVVVPAQVAAPFDY	16	1-5	1	QQYNSYSRT	9			
neAID-def.1 K5	3-33	6-19	2	2	DFAEDSSGWYPPSLGWYFDL	20	3-11	1	QQRRNWPSWT	10	-	+	-
neAID-def.1 K9	4-39	1-26	2	3	RGYSGSYSFFGDAFDI	16	3-15	4	QQYNNWPLT	9	+	-	-
neAID-def.1 K11	3-15	3-10	3	4	TTDPAIPLRGVSPWDY	16	1-39	4	QQSYSTPPLT	10	+	-	-
neAID-def.1 K15 #	5-a	2-2	3	5	GPDIVVVPAAIGWWFDP	17	1-39	2	QQSYSTPDT	9			
neAID-def.1 K16	4-61	1-26	3	6	ERGSIVGAHYYYYGMDV	17	2-28	1	MQALQTPRA	9	-	-	-
neAID-def.1 K17	3-23	5-24	1	4	DGLVERWLRNYFDY	14	3-11	5	QQRSNWPIT	9	+	-	-
neAID-def.1 K19	3-23	3-3	2	6	AVADDFWSGNYYYYGMDV	18	1-39	4	QQSYSTPLT	9	+	+	-
neAID-def.1 K25	3-66	/	/	6	HPPAGPFQANYYYYYMDV	18	1-8	3	QQYYSYPFT	9	-	-	-
neAID-def.1 K27	1-8	6-6	3	6	QSARLYYYYGMDV	13	3-20	4	QQYGSSPPGLT	11	-	-	-
neAID-def.1 K28	4-31	2-15	2	3	EGLWDCSGGSCYSQIDAFDI	20	1-39	2	QQSYSTPRT	9	-	+	c
neAID-def.1 K29	1-2	2-2	2	6	GYCSSTSCFLSHTRYYYGMDV	21	2-28	1	MQALQTPPT	9	-	-	f
neAID-def.1 K30	4-34	2-21	3	4	GGRKGVVTAITY	12	1-39	2	QQSYSTPQT	9	-	-	-
neAID-def.1 K31	3-53	5-12	3	6	AVFVATIRETYGMDV	15	1-39	4	QQSYSTPLT	9	+	+	-
neAID-def.1 K35	3-30	5-5	2	6	GSDGYSYGYSPYYYYGMDV	19	3-15	4	QQYNNWPLT	9	-	+	-
neAID-def.1 K44	4-39	3-22	2	4	HRTYYDSSGYYPFDY	15	3-15	1	QQYNNWPPTLT	11	-	+	-
neAID-def.1 K46	3-7	/	/	5	DLVPVGVYSPPRVGATSRESNWFDP	25	1-5	1	QQYNSYPRT	9	+	+	-
neAID-def.1 K48	3-11	3-22	2	3	DGPYYYDRSAFDI	13	1-5	1	QQYNSYSRT	9	-	+	-
	VH	D	RF	JH	CDR3(aa)	Length	Vλ	Jλ	CDR3(aa)	Length	Poly	HEp-2	Staining
neAID-def.1 L7	3-9	6-19	3	4	GIHFAVAPTRYFDY	14	1-51	3	GTWDSSLSAGV	11	-	-	-
neAID-def.1 L13	3-23	2-21	3	4	SHIVVVTAIWELDY	14	2-14	3	SSYTSSSTLGV	11	-	-	-
neAID-def.1 L24	4-59	6-13	2	6	VGYSSSWYDYYYGMDV	16	1-40	2	QSYDSSLSGVV	11	-	-	-
neAID-def.1 L27					see kappa		3-25	1	QSADSSGTYGV	11			
neAID-def.1 L32	3-66	2-21	2	4	GALPYCGGDCYSHY	14	2-11	3	CSYAGSYTWV	10	-	-	-
neAID-def.1 L37	4-39	3-22	3	3	RTPTMIVVVDKDSPPDAFDI	20	3-25	2	QSADSSGTYVV	11	-	-	-
neAID-def.1 L41	3-9	1-26	3	5	GSVGGLRGNWFDP	13	2-11	1	CSYAGSYTSYV	11	-	+	n
neAID-def.1 L47	3-23	3-3	2	5	DPVRHTYYDFWSGYQNWFDP	20	1-40	2	QSYDSSLSGVV	11	-	-	-
	VH	D	RF	JH	CDR3(aa)	Length							
neAID-def.1 H6	3-15	5-5	3	4	AVDTALDY	8							
neAID-def.1 H8	4-61	5-24	2	4	DNYNCPDY	8							
neAID-def.1 H36	1-24	6-19	3	4	VPRIAVAGYYFDY	13							
neAID-def.1 H38	4-39	/	/	4	HGGLDPFDY	9							
neAID-def.1 H39	4-39	4-23	3	4	LREAWATVVTPYYYFDY	17							
neAID-def.1 H42	4-34	2-2	2	6	KGNCSSTSCSPYGMDV	16							
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	HEp-2	Staining
neAID-def.17 K3	1-18	5-5	3	4	DSFVDTAMMYHPAGFDY	17	3-20	2	QYGSSPCS	8	-	-	-
neAID-def.17 K8	3-7	/	/	6	DQKGPGGTKRAPWGFYYYGMDV	22	3-15	3	QQYNNWPPFT	10	+	+	f
neAID-def.17 K17	1-69	6-19	2	4	KYSSGWRFFDY	11	3-20	4	QQYGSSPT	8	+	+	-
neAID-def.17 K23	3-49	6-19	3	4	AGLAVARPFDY	11	4-1	1	QQYYSTPWT	9	-	-	-
neAID-def.17 K25	3-30	2-8	3	4	SIVPFYYFDY	10	1-27	4	QKYNSAPLT	9	-	-	f
neAID-def.17 K28	3-9	6-13	3	4	DIAAAGRGYFDY	12	3-11	5	QQRSNWPPIT	10	-	-	-
neAID-def.17 K30	1-2	1-26	3	4	RDKVGAYDY	9	1-39	1	QQSYSTPQT	9	-	-	-
neAID-def.17 K35	4-59	/	/	6	DWVRHGMDV	9	1-6	1	LQDYNYPRT	9	-	+	-
neAID-def.17 K36	4-31	/	/	3	EPMTPIEGFSAFDI	14	1-39	1	QQSYSTRT	8	-	+	-
neAID-def.17 K38	3-23	6-19	2	4	YSSGSN	6	1-9	1	QQLNSYLWT	9	-	+	-
neAID-def.17 K39	4-39	1-26	3	4	EGPIGIVGATEGFDY	15	1-8	1	QQYYSFPRT	9	-	-	-
neAID-def.17 K40	4-39	3-22	2	2	HRCASDSSGYYRPRVRYFDL	20	3-20	4	QQYGSSPGV	9	+	+	n
neAID-def.17 K48	4-59	2-15	2	4	ERRYCSGGSCYSPLDY	16	1-39	3	QQSYSTPRT	9	+	+	-
neAID-def.17 K6							1-39	1	QQSYSTPRT	9			
	VH	D	RF	JH	CDR3(aa)	Length	Vλ	Jλ	CDR3(aa)	Length	Poly	HEp-2	Staining
neAID-def.17 L9	4-39	3-22	2	4	LHDSSGYYFDY	11	1-44	2	AAWDDSLNGRVV	12	-	-	-
neAID-def.17 L10	1-46	3-10	2	6	AGGSGSYWRDGGMDV	15	2-14	3	SSYTSSSTLNWV	12	-	-	-
neAID-def.17 L20	3-11	5-24	3	3	EQEMAILGAFDI	12	3-1	1	QAWDSSNYV	9	-	-	-
neAID-def.17 L22	1-69	6-19	2	6	EDTAKSSGWFRHYYYYGMDV	20	1-51	1	GTWDSSLSAGGV	12	2+	+	f
neAID-def.17 L31	3-9	6-19	3	1	DIIGAAVAGQHWVYFQH	17	1-40	2	QSYDSSLSGYVV	12	-	-	-
neAID-def.17 L34 #	3-30	3-3	2	4	ESRYYDFWSGYWD	13	2-23	1	CSYAGSSTYV	10			
neAID-def.17 L42	4-17	3-10	3	6	EGLSDMGLRGVWFDYYGMD	19	2-14	2	SSYTSSSTLVV	11	-	+	-
neAID-def.17 L2							1-40	1	QSYDSSLSAWV	11			
	VH	D	RF	JH	CDR3(aa)	Length							
neAID-def.17 H26	3-30	6-19	3	4	DSAGPQAVAGSPDY	14							
neAID-def.17 H33	1-69	5-24	1	5	DLGQHLAP	8							
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	Hep-2	Staining
neAICDA+/-1F K2	4-34	3-22	2	4	GIYYDSSGSHMDY	13	1-27	1	QKYNSAPRT	9	-	+	-
neAICDA+/-1F K4	1-2	6-19	2	5	SGYSSGWDRGDNWFDP	16	3-20	5	QQYGSSLSIT	10	+	+	-
neAICDA+/-1F K6	3-74	3-3	3	6	RGIFGVVGDYMDV	13	3-11	4	QQRSNWPPLT	10	+	+	-
neAICDA+/-1F K14	4-59	6-19	3	3	DLPALFRRGIAVGDAFDI	18	3-15	1	QQYNNWPPWT	10	+	+	-
neAICDA+/-1F K36	4-4	6-6	3	5	FSEQAAPRSGGFDP	14	1-5	2	QQYNSYSPYT	10	-	-	-
neAICDA+/-1F K38	4-30	2-2	2	6	AGRGLSSTSGRRWYYMDV	18	1-5	1	QQYNSYPWT	9	+	-	-
neAICDA+/-1F K42	3-48	5-5	3	6	DTAMDRDNYYYYYYMDV	18	1-39	4	QQSYSTPPYF	10	-	-	-
neAICDA+/-1F K44	4-31	3-22	2	4	PGAGGYYSLDY	11	3-20	2	QQYGSSLYT	9	-	-	-
neAICDA+/-1F K45							3-20	1	QQYGSSPPT	9			
	VH	D	RF	JH	CDR3(aa)	Length	Vλ	Jλ	CDR3(aa)	Length	Poly	Hep-2	Staining
neAICDA+/-1F L12	3-33	5-5	3	6	DFVLADTAMGYDYYYYYMDV	20	3-1	2	QAWDSSTAAVV	11	-	+	-
neAICDA+/-1F L15	1-46	5-24	2	6	AGSRDGYNLDYYYGMDV	17	2-14	3	SSYTSSSTLV	10	-	-	-
neAICDA+/-1F L16	1-2	4-17	2	4	LMGPYYGDPYYFDY	14	2-14	2	SSYTSSSTL	9	-	+	-
neAICDA+/-1F L22	3-49	1-26	1	4	AGDGWELNYFDY	12	3-25	2	QSADSSGTSVV	11	-	-	-
neAICDA+/-1F L23	4-59	2-2	3	5	HARSRQVVPANWFDP	15	3-21	1	QVWDSSSDHYV	11	-	-	-
neAICDA+/-1F L24	3-66	/	/	6	CDHSYEIAGVRWSPYSFED	19	1-40	2	QSYDSSLSGVV	11	-	-	-
neAICDA+/-1F L29	4-4	5-5	2	2	DPRYSYGYWYFDL	13	3-21	3	QVWDSSSDFWV	11	-	+	f
neAICDA+/-1F L35	1-46	3-10	2	5	APPYNYGSGSYVLFDP	16	2-23	2	CSYAGSSTFVV	11	-	+	-
neAICDA+/-1F L40	1-8	6-6	2	6	GPNPYSRLSPTGYYGMDV	18	3-1	1	QAWDSSTALYV	11	-	-	-
neAICDA+/-1F L47	3-20	6-13	2	3	GFVNSSSWEFSSPKIAGLNAFDI	23	3-21	1	QVWDSSSDHPYV	12	-	-	-
neAICDA+/-1F L48	3-23	3-3	2	2	DYYYDSSGYYPGW	13	1-47	2	AAWDDSLSGHVV	12	-	-	-
neAICDA+/-1F L77	3-24	/	/	5	PWEAARNLFDY	11	2-14	3	SSYTSSSTLHVV	12	-	-	-
neAICDA+/-1F L43							1-44	1	AAWDDSLNGYV	11			
	VH	D	RF	JH	CDR3(aa)	Length							
neAICDA+/-1F H27	3-33	6-6	2	6	GGRTARREYYYYYYMDV	17							
neAICDA+/-1F H3	3-33	6-19	2	4	DPGSGWYDFDY	11							
neAICDA+/-1F H27	3-33	6-6	2	6	GGRTARREYYYYYYMDV	17							
	VH	D	RF	JH	CDR3 (aa)	Length	Vκ	Jκ	CDR3 (aa)	Length	Poly	HEp-2	Staining
neAICDA+/-1M K2	5-51	/		6	HGRDYYYYGMDV	12	3-20	3	QQYGSSPPFT	10	-	+	-
neAICDA+/-1M K3	4-59	4-17	3	6	DRETTFFYYGMDV	13	2-28	5	MQALQTPIT	9	-	-	c
neAICDA+/-1M K5	4-4	2-15	2	5	DGLAPYCSGGSCYPAGWFDP	20	2-28	2	MQALQTPYS	9	-	-	-
neAICDA+/-1M K10	3-30	5-12	2	6	DRPGPYSGYGLGYYGMDV	18	1-39	4	QQSYSTPLT	9	-	-	-
neAICDA+/-1M K13	4-39	1-26	3	4	GATMGSDY	8	1-33	4	QQYDNLPPT	9	-	-	-
neAICDA+/-1M K14	4-61	3-10	1	6	DRSVLLWFGELSLGTQNDYYYGMDV	25	3-15	2	QQYNNWPPLYS	11	+	+	-
neAICDA+/-1M K15 #	3-11	2-2	2	6	DRFWDCSITSCYGDYYYYYGMDV	23	3-11	5	QQRSNTIT	8			
neAICDA+/-1M K16	4-61	1-7	2	6	RNYYYYGMDV	10	3-15	1	QHYNNWPPWT	10	+	+	c
neAICDA+/-1M K17	3-30	/		4	SLTDPPRREFDY	12	1-9	4	QQLNSYPLT	9	-	+	v
neAICDA+/-1M K18	3-7	6-19	2	4	EAPYSSGWLILFDY	14	3-11	5	QQRSNWPPT	9	-	+	c
neAICDA+/-1M K19	4-30	3-16	2	3	DLIGPYYDYALDPLTFDI	18	3-15	2	QQYNNWPYT	9	-	+	-
neAICDA+/-1M K20	1-46	3-10	3	6	DREITMVRGRYYYYGMDV	18	1-39	4	QQSYSTPLT	9	-	+	c
neAICDA+/-1M K22	1-8	1-26	3	4	DAGATVIDY	9	1-39	3	QQSYSTPA	8	-	-	-
neAICDA+/-1M K38	5-51	4-4	2	6	LPVGNYYYYGMDV	13	1D-17	2	LQHNSYPYT	9	+	-	-
neAICDA+/-1M K39	4-59	3-22	2	3	ALYYYDSSGYHDDAFDI	17	1-5	1	QQYNSYPWT	9	-	-	-
neAICDA+/-1M K41 #	3-9	3-3	1	4	EIRFMFDY	8	4-1	5	QQYYSTPPIT	10			
neAICDA+/-1M K43	4-61	3-3	2	3	DYYDFWSGYPLDAFDI	16	4-1	2	QQYYSTPLMYS	11	-	-	-
neAICDA+/-1M K1							1-39	4	QQSYSTPLT	9			
neAICDA+/-1M K23							1-39	5	QQSYSTPH	8			
	VH	D	RF	JH	CDR3 (aa)	Length	Vλ	Jλ	CDR3 (aa)	Length	Poly	HEp-2	Staining
neAICDA+/-1M L4	3-9	2-2	3	6	DIRPVVPAARDGGMDV	16	3-1	2	QAWDSSTVV	9	-	-	-
neAICDA+/-1M L5 #					see kappa		1-47	3	AAWDDSLSVV	10			
neAICDA+/-1M L11	3-15	3-9	1	4	DFLAKGMRLLYYDY	14	2-14	3	SSYTSSSRTV	10	2+	+	-
neAICDA+/-1M L16					see kappa		2-14	1	SSYTSSSTPYV	11	+	+	c
neAICDA+/-1M L19					see kappa		1-44	3	AAWDDSLNGWV	11	-	-	-
neAICDA+/-1M L37	1-24	3-22	3	1	FPPTITMIVVVISNQYFQH	19	1-44	2	AAWDDSLNGDVV	12	-	-	-
neAICDA+/-1M L41					see kappa		2-23	3	CSYAGSSTFERV	12	-	-	-
neAICDA+/-1M L42	3-11	3-22	2	3	VGIPNYYDSSGRTTHAAFDI	20	2-14	1	SSYTSSSTLYV	11	-	-	-
neAICDA+/-1M L43					see kappa		2-23	2	CSYAGSSPHVV	11	+	+	n
neAICDA+/-1M L44	4-59	4-17	2	5	GDYGDYDPWFDP	12	3-1	2	QAWDSSTVV	9	-	-	-
	VH	D	RF	JH	CDR3 (aa)	Length							
neAICDA+/-1M H45	3-30	2-8	2	4	GPCYLGTNAYYFDY	14							
neAICDA+/-1M H48	4-34	2-15	3	6	GRLDIVVVVD	10							
	VH	D	RF	JH	CDR3 (aa)	Length	Vκ	Jκ	CDR3 (aa)	Length	Poly	HEp-2	Staining
neAICDA+/-6F K1	4-59	3-16	3	6	VIDSNPVSPYYYYGMDV	17	1-5	1	QQYNSYPWT	9	-	-	-
		4-4	2										
neAICDA+/-6F K3 #	4-39	6-19	3	4	HQPPLAVALAQFDY	14	3-20	1	QQYGSSPRT	9			
neAICDA+/-6F K8	3-23	/		5	EPMGSAYNWFDP	12	3-15	1	QQYNNWPPWT	10	-	-	-
neAICDA+/-6F K9	3-11	3-10	2	4	GSYGSGSYYDY	11	3-20	1	QQYGSSRT	8	-	-	-
neAICDA+/-6F K10	3-48	/		3	GDWDDAFDY	9	3-20	2	QQYGSSPMYT	10	-	-	-
neAICDA+/-6F K14	3-48	1-7	3	6	PGVTGTTLPVTTGYYYHGMDV	21	2-28	4	MQALQTPPN	9	-	-	-
neAICDA+/-6F K17	3-30	2-15	2	3	PRACSGGSCPGAFDI	15	1-39	3	QQSYSTSIT	9	-	+	-
neAICDA+/-6F K19 #	3-33	6-19	2	4	ERSGWYFDY	9	3-11	3	QQRNNWLT	8			
neAICDA+/-6F K20	3-30	6-19	2	5	DGGSGRDNWFDP	12	1-39	4	QQSYSTPLT	9	-	+	-
neAICDA+/-6F K21	3-13	6-6	3	6	GRSIAQTPSYYYYGMDV	17	3-20	5	QQYGSSPSIT	10	-	+	-
neAICDA+/-6F K26	3-23	3-3	3	6	ALQRVVVVIHPYYGMDV	17	1-5	1	QQYNSQWT	8	+	+	-
neAICDA+/-6F K32 #	4-4	6-13	2	4	VGSSTWSFFDY	11	1-39	1	QQSYSTPVT	9			
neAICDA+/-6F K37	5-51	2-8	2	4	LYCTNDVCYTIYYFDY	16	3-20	4	QQYGSSLT	8	-	-	-
neAICDA+/-6F K38	4-59	3-10	2	6	DKDYYGSGSYNYYGMDV	17	1-39	2	QQSYSTPYT	9	-	+	-
neAICDA+/-6F K40	3-23	4-23	2	4	DYGGNSGLFDY	11	1-17	2	LQHNSYPQT	9	-	-	-
neAICDA+/-6F K41	3-15	6-6	2	5	DQDSSPGRGIL	11	3-20	3	QQYGSSPFT	9	-	-	-
neAICDA+/-6F K47	3-23	1-20	1	5	DFPERRLGWFDP	12	1-8	1	QQYYSFPRT	9	-	-	-
neAICDA+/-6F K101	3-23	6-19	3	4	YGLAVAGLNYFDY	13	3-11	2	QQRSNWPPYT	10	+	+	-
neAICDA+/-6F K102	1-46	6-13	1	4	DYQQQSDY	8	3-20	1	QQYGSSPRT	9	-	-	-
neAICDA+/-6F K105	3-49	6-13	1	6	DQQPDYYYYGMDV	13	1-8	1	QQYYSFPWT	9	-	-	-
neAICDA+/-6F K107	3-23	6-13	3	4	VPAAAGTGAFDY	12	3-15	2	QQYNNWPPYT	10	-	-	-
neAICDA+/-6F K115	4-59	3-3	2	4	DIHFSY	6	3-20	2	QQYGSSPYT	9	-	-	-
neAICDA+/-6F K116 #	3-9	6-25	2	6	DKGIGASLGYYGMDV	15	4-1	2	QQYYSTPYT	9			
neAICDA+/-6F K117	3-49	3-22	2	4	VSFYYYDSSGYYHFDY	16	1-39	3	QQSYSTPLFT	10	-	-	-
neAICDA+/-6F K123	3-7	3-10	3	4	DLTMVRGVMAPPGPLAPSSFDY	22	1-8	3	QQYYSYPFT	9	+	-	-
neAICDA+/-6F K132 #	4-39	2-2	3	5	LPIVVVPAATWFDP	14	3-15	4	QQYNNWPLT	9			
neAICDA+/-6F K134 #	4-4	3-22	2	5	HYYDSSGYYAVL	13	3-20	2	QQYGSSPYT	9			
neAICDA+/-6F K136 #	1-24	5-5	3	6	GPSVDTAMVSHYYGMDV	17	1-6	4	LQDYNYPLT	9			
neAICDA+/-6F K140 #	3-30	3-22	2	4	EGYYYDSSGYYPIDY	15	2-28	1	MQALQTPPWT	10			
neAICDA+/-6F K141	3-15	3-10	2	6	DRYGSGSYYNVGYYYGMDV	19	1-17	1	LQHNSYPRT	9	+	+	-
neAICDA+/-6F K143	4-31	6-13	3	3	LAVAAGGAFDI	11	3-20	5	QQYGSSPLVT	10	-	+	-
neAICDA+/-6F K44							1-5	1	QQYNSYPWT	9			
	VH	D	RF	JH	CDR3 (aa)	Length	Vλ	Jλ	CDR3 (aa)	Length	Poly	HEp-2	Staining
neAICDA+/-6F L5	3-7	6-25	2	6	DLGYYYGMDV	10	3-1	1	QAWDSSTASYV	11	-	-	-
neAICDA+/-6F L11 #	4-34	3-3	2	4	SGYFLIDS	8	3-1	2	QAWDSSVVV	9			
neAICDA+/-6F L13 #	3-7	5-24	1	5	ELPSIADSKIRWLDP	15	1-40	1	QSYDSSLNGYV	11			
		3-22	2										
neAICDA+/-6F L15 #	1-2	6-19	1	4	SSKANTAQWLGQIDY	15	2-14	2	SSYTSSSTLV	10			
neAICDA+/-6F L22	3-11	3-3	2	5	DLENYDFWSGHPNPRFDP	18	1-51	2	GTWDSSLSAVV	11	+	+	c
neAICDA+/-6F L23	5-51	2-2	2	6	LGYCSSTSCYSHYGMDV	17	1-44	3	AAWDDSLNGRGV	12	-	-	-
neAICDA+/-6F L29	3-30	4-4	2	4	DRVYSNYWYYFDY	13	2-14	2	SSYTSSSSVV	10	-	+	-
neAICDA+/-6F L30 #	3-23	4-17	3	6	STVTTYYYGMDV	12	8-61	3	VLYMHSGISV	10			
neAICDA+/-6F L42	1-8	2-2	2	6	GGCSSTSCPHYYYYYGMDV	19	3-1	2	QAWDSSTARV	10	-	+	-
neAICDA+/-6F L43	3-7	6-19	2	5	VRAIEDSSGPGGGWFDP	17	3-1	2	QAWDSSTVV	9	-	-	-
neAICDA+/-6F L45 #	3-11	4-17	3	6	AMTTVTAYGMDV	12	1-40	2	QSYDSSLSGVV	11			
neAICDA+/-6F L46	1-8	4-17	3	3	GLFTVTTSGAFDI	13	3-1	3	QAWDSSTAV	9	-	-	-
neAICDA+/-6F L48	3-64	2-2	2	4	GSSTSCSNPIDY	12	1-47	3	AAWDDSLSGWV	11	-	+	-
neAICDA+/-6F L101 #					see kappa		1-40	2	QSYDSSLSGYVV	12			
neAICDA+/-6F L111	3-30	2-2	3	4	DPPALVVPAANHYFDY	16	1-51	2	GTWDSSLSAVV	11	-	-	-
neAICDA+/-6F L121	1-18	6-13	1	4	EGSQLVDY	8	3-10	3	YSTDSSGNGV	10	-	+	-
neAICDA+/-6F L122	3-30	3-16	3	5	GLGVTHGECWFDP	13	1-47	2	AAWDDSLSGVV	11	-	+	-
neAICDA+/-6F L124	3-9	/	/	5	GAYTAWSTHTTNWFDP	16	3-21	1	QVWDSSSDHYV	11	-	+	-
neAICDA+/-6F L129 #	3-23	/	/	6	EDYYYYYYDMDV	12	2-8	1	SSYAGSNNYV	10			
neAICDA+/-6F L130	1-2	6-19	2	4	GDSSGRFDY	9	1-51	2	GTWDSSLSAVV	11	-	-	-
neAICDA+/-6F L131	5-51	3-10	2	4	RGYYYGSGSYYSGDGGAHLTFDY	23	1-44	2	AAWDDSLNVV	10	-	-	-
neAICDA+/-6F L141 #					see kappa		7-46	3	LLSYSGARV	9			
neAICDA+/-6F L145	3-11	/	/	6	ASGGMDV	7	1-44	2	AAWDDSLNGLV	11	-	-	-
neAICDA+/-6F L146	1-2	/	/	4	DLIRGEIDSLGPMYSSSWLLFDY	23	1-40	1	QSYDSSLSGSV	11	+	-	-
neAICDA+/-6F L147	1-58	1-26	2	6	DLPPPRSGSYRDPDYYYYYGMDV	23	7-46	3	SYSGARLG	8			
neAICDA+/-6F L02							1-40	2	QSYDSSLSGSV	11			
neAICDA+/-6F L18							1-51	1	GTWDSSLSAPYV	12			
neAICDA+/-6F L44							6-57	2	QSYDLTTVL	9			
	VH	D	RF	JH	CDR3 (aa)	Length							
neAICDA+/-6F H2	4-59	6-6	3	5	IAARPMQWWFDP	12							
neAICDA+/-6F H7	3-7	6-25	2	6	DLGYYYGMDV	10							
neAICDA+/-6F H16	3-48	5-24	3	4	ARSEMATNCMHY	12							
neAICDA+/-6F H113	5-51	1-1	2	3	FKANWNQHAFDI	12							
neAICDA+/-6F H126	1-24	4-4	1	6	EFLPTPLQSPYYYGMDV	17							
neAICDA+/-6F H139	4-4	5-12	2	4	EGAYSGYGLFDY	12							
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	HEp-2	Staining
neAICDA+/-17M K13	3-30-3	5-5	3	4	DHEDSGGYSYGLDC	14	1-39	4	QQSYSTPPVT	10	-	+	-
neAICDA+/-17M K25	4-34	2-2	2	6	VGHRYCSSTSCYLSYGMDV	19	3-20	1	QQYGSSPRT	9	-	+	c
neAICDA+/-17M K26	3-33	3-10	1	6	SMVRGARLVDEGGMDV	16	1-39	4	QQSYSTPS	8	-	-	-
neAICDA+/-17M K32	3-30-3	6-13	2	6	SSSWYLGSDCHGGMDV	16	1-33	2	QQYDNLPYT	9	+	+	c
neAICDA+/-17M K37	4-34	1-26	1	6	APQGLGSYYLSIPYYYYGMDV	21	3-15	1	QQYNNWPRE	9	+	+	c
neAICDA+/-17M K43	3-23	6-13	2	4	RPLPMYSSSWNSKTTFDY	18	1-5	3	QQYNSYPS	8	+	+	c
neAICDA+/-17M K47	4-59	7-27	2	5	DRTGDSWNWFDP	12	1-39	5	QQSYSTLIT	9	-	+	-
	VH	D	RF	JH	CDR3(aa)	Length	Vλ	Jλ	CDR3(aa)	Length	Poly	HEp-2	Staining
neAICDA+/-17M L1	3-48	7-27	3	2	GGTWVTGDLSYWYFDL	16	1-40	2	QSYDSSLSGVV	11	-	-	-
neAICDA+/-17M L6	4-34	3-10	2	4	CSPRMGSGSYQFDY	14	2-14	1	SSYTSSLYV	9	-	-	-
neAICDA+/-17M L8	3-53	3-9	1	6	DATTVTLRYFDV	12	1-40	2	QSYDSSLSGYVV	12	-	-	-
neAICDA+/-17M L10	4-30	2-2	3	2	TYIVVVPAADWYFDL	15	1-47	1	AAWDDSLRGV	10	-	-	-
neAICDA+/-17M L20	1-18	6-6	2	4	GDSSSSDY	8	6-57	3	QSYDSSNQV	9	-	-	-
neAICDA+/-17M L26					see kappa		3-21	1	QVWDSSSDHPYV	12	-	+	-
neAICDA+/-17M L30	4-30-4	6-13	2	4	GPSSSWYGEFDY	12	6-57	2	QSYDSSNVV	9	-	-	-
neAICDA+/-17M L33	3-11	3-22	2	3	DIGVRDYYDSSGYSLVDAFDI	21	3-1	2	QAWDSSYVV	9	-	-	-
neAICDA+/-17M L35 #	3-33	2-15	3	6	ENEVVVAATVYYYYGMDV	18	1-40	2	QSYDSSLSGYVV	12			
neAICDA+/-17M L46	3-7	5-5	2	4	DFYSYLDY	8	1-51	3	GTWDSSLSAGV	11	-	-	c
neAICDA+/-17M L24							3-1	2	QAWDSSVV	8			
neAICDA+/-17M L29							2-8	3	ASYAGSNFKIS	11			
	VH	D	RF	JH	CDR3(aa)	Length							
neAICDA+/-17M H1	3-48	7-27	3	2	GGTWVTGDLSYWYFDL	16							
neAICDA+/-17M H10	4-30	2-2	3	2	TYIVVVPAADWYFDL	15							
neAICDA+/-17M H12	1-69	5-24	2	6	GLRDGYNLNYYYGMDV	16							
neAICDA+/-17M H14	1-69	1-1	3	5	LTTGTTRG	8							
neAICDA+/-17M H20	1-18	6-6	2	4	GDSSSSDY	8							
neAICDA+/-17M H30	4-30-4	6-13	2	4	GPSSSWYGEFDY	12							
neAICDA+/-17M H33	3-11	3-22	2	3	DIGVRDYYDSSGYSLVDAFDI	21							
neAICDA+/-17M H37	4-34	1-26	2	6	APQGLGSYYLSIPYYYYGMDV	21							
neAICDA+/-17M H40	3-7	/	/	6	DAHWLKYYYYYYGMDV	16							
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	HEp-2	staining
neAICDA+/-17F K2	4-61	4-17	3	5	VLSEEIPQTTVTTGEGFDP	19	1-39	4	QQSYSTPALT	10	-	-	-
neAICDA+/-17F K9	3-48	3-9	2	6	GQYDILTGYYIYYGMDV	17	3-15	4	QQYNNWPPLT	10	+	-	-
neAICDA+/-17F K21	1-2	4-17	2	4	AYGDALYFDY	10	3-20	4	QQYGSSPLT	9	-	-	-
neAICDA+/-17F K26	1-69	3-22	2	4	DQYYYDSSGYYYGGDFDY	18	3-20	2	QQYGSSPKYT	10	+	+	c
neAICDA+/-17F K29	1-46	2-21	2	4	TGTGGGDPYYFDY	13	3-20	4	QQYGSSPLT	9	-	-	-
neAICDA+/-17F K31	4-34	3-22	2	5	RARGVSYYDSTRGSNWFDP	19	3-11	5	QQRSNWPT	8	-	+	-
neAICDA+/-17F K39	3-23	3-3	3	3	VVVMNDAFDI	10	1-8	4	QQYYSYPALT	10	-	+	-
neAICDA+/-17F K51	4-39	3-22	2	4	LPYYYDSSGYYYIDY	15	1-5	2	QQYNSYLYT	9	-	-	-
neAICDA+/-17F K60	4-39	/	/	4	DGVKYGGTYY	10	3-15	2	QQYNNWPRS	9	-	-	-
neAICDA+/-17F K65	4-39	5-5	2	4	DGERYSYGFSHRGYFDY	17	2-28	3	MQALQTRFT	9	+	-	-
neAICDA+/-17F K68	4-39	3-10	2	4	HKRYYGADY	9	3-15	3	QQYNNWPRFT	10	+	+	-
neAICDA+/-17F K71							2-28	2	MQALQTPT	8			
neAICDA+/-17F K11							1-39	1	QQSYSTPLT	9			
neAICDA+/-17F K36							1-5	2	QQYNSYPYT	9			
neAICDA+/-17F K57							2-28	1	MQALQTPPWT	10			
	VH	D	RF	JH	CDR3(aa)	Length	Vλ	Jλ	CDR3(aa)	Length	Poly	HEp-2	staining
neAICDA+/-17F L4	5-51	3-22	2	5	LLYDSSGYFAYNWFDP	16	2-14	2	SSYTSSSTLVV	11	-	+	c
neAICDA+/-17F L18	3-21	2-15	2	4	PASYCSGGSCYSEPFGY	17	3-21	2	QVWDSSSDHRGV	12	-	+	-
neAICDA+/-17F L26 #					see kappa		1-44	3	AAWDDSLNGL	10			
neAICDA+/-17F L43	4-34	6-13	3	4	GRRIAAAVHGHYYFDY	16	2-23	1	CSYAGSSTYV	10	+	+	-
neAICDA+/-17F L50	3-48	6-19	2	4	EGIGSGWGAGWEN	13	1-40	1	QSYDSSLSGLYV	12	-	-	-
neAICDA+/-17F L58	4-39	/	/	3	VAGAGHGSPKVRLFDI	16	3-25	2	QSADSSGTYVV	11	-	+	-
neAICDA+/-17F L59	4-59	2-2	2	5	RAGRYCSSTSCYAGPNWFDP	20	3-1	2	QAWDSSTVV	9	-	-	-
neAICDA+/-17F L60					see kappa		2-11	2	CSYAGSYTYVV	11	-	-	-
neAICDA+/-17F L65					see kappa		1-47	3	AAWDDSLSGPWV	12	+	-	-

neUNG-def.2 L46	3-49	3-22	2	4	HYYDSSGYYY	10	1-40	2	QSYDSSLSGYVV	12	-	-	v
neUNG-def.2 L4							1-51	2	GTWDSSLSALV	11			
	VH	D	RF	JH	CDR3 (aa)	Length							
neUNG-def.2 H26	3-33	3-10	2	6	AWRYYYGSGSYYKSSYYYYGMDV	23							
neUNG-def.2 H37	3-49	3-10	2	4	EPGSGNDY	8							

RF, reading frame; #, antibody failed to be expressed

-, non-reactive; +, reactive;

c, diffuse cytoplasmic staining; N, nuclear staining; F, cytoplasmic fibers; V, vesicles

Supplementary Table 4, related to Figure 6 and 7. Repertoire and reactivity of antibodies from new emigrant B cells of NSG mice

Ig	HEAVY						LIGHT				REACTIVITY		
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	HEp2	Staining
neM1 K2	1-3	1-7	2	4	DLELYYFDY	9	3-20	1	QQYGSSPT	8	-	-	-
neM1 K5	4-30-2	3-10	2	4	ISGSYYNY	8	1-39	1	QQSYSTPWT	9	-	+	-
neM1 K8	4-59	3-9	2	4	SPPFDWIYYFDY	12	3-20	1	QQYGSSPWT	9	-	-	-
neM1 K9	3-73	4-23	2	4	RYGGNYYFDY	10	3-11	4	QQRSNWPLT	9	-	+	-
neM1 K10	3-15	1-26	1	3	QTEWELDAFDI	11	3-20	4	QQYGSSPPLT	10	-	-	-
neM1 K11	3-74	3-10	2	6	DPGKGYYGSGSYYYYYGMDV	20	1-6	2	LQDYNYPYT	9	-	-	-
neM1 K16	4-30-2	/	/	3	TNEPNAFDI	9	2-28	4	MQALQTPLT	9	-	-	-
neM1 K22	4-4	3-22	2	3	DRADYYDSSGYYYAFDI	17	1-17	4	LQHNSYPPT	9	-	-	-
neM1 K23	3-7	1-26	2	6	NRPPGAINYYGMDV	14	3-11	1	QQRSNWPWT	9	-	-	-
neM1 K25	4-34	1-26	3	4	GGGATEY	7	1-17	1	LQHNSYLWT	9	-	-	-
neM1 K32	4-59	/	/	3	THPQSDAFDI	10	2-30	4	MQGTHWPLT	9	-	+	-
neM1 K33#	3-7	3-10	3	3	ILGGITMVRGAEDAFDI	17	3-20	1	QQYGSSPRT	9			
neM1 K37	3-30	3-10	1	4	EKGWFGELEGLAIDY	15	3-15	1	QQYNNWPQT	9	-	-	-
neM1 K38	4-34	7-27	2	2	GLTGDSGTDWYFDL	14	1-39	4	QQSYSTPLT	9	-	-	-
neM1 K40	4-39	6-13	2	4	HPYSSSFDY	9	3-20	2	QQYGSSYT	8	-	-	-
neM1 K42	3-33	3-10	2	6	DPRLGSGSYYYYGMDV	16	1-39	3	QQSYSTPFT	9	-	+	-
neM1 K43#	4-30-4	7-27	2	4	NKLNWGLDY	9	1-5	1	QQYNSYSPWT	10			
neM1 K45	4-4	7-27	2	5	GWGFGNWFDP	10	3-20	2	QQYGSSPPYT	10	-	-	-
neM1 K46	4-59	/	/	4	SFSRLASFDY	10	3-20	1	QQYGSSLGT	9	-	-	-
neM1 K48	4-59	/	/	4	VGGRGGDFDY	10	1-33	3	QQYDNLPRVT	10	-	-	-
	VH	D	RF	JH	CDR3(aa)	Length	Vλ	Jλ	CDR3(aa)	Length	Poly	Hep2	Staining
neM1 L1	3-30	6-13	2	4	SGSSWYYFDY	10	2-14	2	SSYTSSSTV	9	-	-	-
neM1 L3	1-69	/	/	4	VMAVYYFDY	9	1-40	1	QSYDSSLSGYV	11	+	+	-
neM1 L6	3-30-3	3-16	2	4	GPSRGGEVFDY	11	3-21	3	QVWDSSSDQNWV	12	-	-	-
neM1 L7	5-51	3-22	2	4	LRIPDYDSSGYYFDY	15	2-8	3	SSYAGSNNLV	10	-	-	-
neM1 L12	4-4	/	/	4	GSIPSDYYFDY	11	3-25	2	QSADSSGTYPV	11	-	-	-
neM1 L13#	1-69	6-13	2	5	TIYSSSWYWFDP	12	5-37	2	MIWPSNAYVV	10			
neM1 L14	3-30	3-22	2	2	DYYDSSGYYYWYFDL	15	1-44	2	AAWDDSLNGPV	11	-	+	+
neM1 L24	3-13	6-13	2	3	GGRDSSWYIAFDI	13	2-23	1	CSYAGSSTYV	10	-	+	-
neM1 L26	1-3	7-27	2	5	GQTTNLGMGPNWFDP	15	1-40	2	QSYDSSLSGVV	11	-	-	-
neM1 L27	3-23	2-15	2	3	DPLSRYCSGGSCYSGAFDI	19	1-44	2	AAWDDSLNGHVV	12	-	-	-
neM1 L28	1-18	6-19	3	4	GIAVAGYFDY	10	2-8	2	SSYAGSNNLV	10	-	-	-
neM1 L30	3-7	/	/	4	DRLGSFDY	8	1-47	3	AAWDDSLSGWV	11			
neM1 L31	3-33	3-9	2	4	DAALRYFDWLLDY	13	2-14	1	SSYTSSSTLV	10	-	-	-
neM1 L34	3-7	/	/	4	DLVGIRATDY	10	1-51	1	GTWDSSLSAYV	11	-	+	-
neM1 L35	3-30	6-13	3	1	DVNAAAGNRAYFQH	14	3-21	1	QVWDSSSDHYV	11	-	-	-
neM1 L36	3-30	1-26	2	4	DGDSGSYFDY	10	2-23	2	CSYAGSSTYVV	11	-	-	-
neM1 L39	3-30-3	7-27	1	3	VCSPELGQWIDI	12	3-21	2	QVWDSSSDHVV	11	-	+	-
neM1 L41	3-15	3-16	2	3	DWGTRAFDI	9	1-51	3	GTWDSSLSAGV	11	-	-	-
	VH	D	RF	JH	CDR3(aa)	Length							
neM1 H4	3-64	6-19	3	4	GIVAVAGNLDY	11							

Supplementary Table 5, related to Figure 6 and 7. Repertoire and reactivity of antibodies from new emigrant B cells of AIDshRNA treated l

Ig	HEAVY						LIGHT				REACTIVITY		
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	HEp2	Staining
neGFP+M5 K3	1-46	4-23	2	1	KPNYGANQYFQH	12	3-20	3	QQYGSSPLT	9	+	+	n
neGFP+M5 K10	3-7	5-5	2	3	DSVRYSYGTDAFDI	14	1-37	4	QRTYNAPLT	9	-	-	-
neGFP+M5 K11	3-30	5-5	3	5	DRDTAMVTWFDP	12	1-5	1	QQYNSYSWT	9	+	-	-
neGFP+M5 K14	3-7	6-19	2	4	APLRWEYSSGWYGDY	15	3-15	1	QQYNNWPPWT	10	-	+	-
neGFP+M5 K16#	1-2	6-13	2	4	SPRSWYDY	8	3-20	5	QQYGSSPTT	9			
neGFP+M5 K18	5-51	6-13	2	3	YSSSWWGAFDI	11	2-30	1	MQGTHWPPT	9	+	-	-
neGFP+M5 K19	3-30-3	1-26	1	6	DRENGGAWERLYGMDV	16	3-20	1	QQYGSSPT	8	+	+	-
neGFP+M5 K20	3-15	1-7	2	2	GPNYPNQSRYFDL	13	3D-15	4	QQYNNWPPAPFT	12	+	+	n
neGFP+M5 K21	3-33	2-21	2	4	EAYCGGDCYFPWDY	14	1-5	2	QQYNSYSHT	9	-	+	c
neGFP+M5 K22	5-a	6-6	2	3	PHEYSSSSDAFDI	13	1-5	1	QQYNSYST	8	-	+	-
neGFP+M5 K23	4-61	4-17	2	4	ESGDYYFDY	9	4-1	2	QQYYSTPYT	9	-	-	-
neGFP+M5 K25#	4-39	6-13	3	3	WYGAFDI	7	3-15	1	QQYNNWLTWT	10			
neGFP+M5 K27	4-61	/	/	3	KPNIPDAFDI	10	1-39	1	QQSYSTPGP	9	-	-	-
neGFP+M5 K28	1-69	3-22	2	4	DYYDSSGYYPFDY	13	3-20	2	QQYGSSPYT	9	+	-	-
neGFP+M5 K29	3-30	4-17	2	4	DLSKVRTYDYGDYNNY	16	1-17	1	LQHNSYPWT	9	-	+	-
neGFP+M5 K31	4-34	3-22	2	3	GVYYDSSGYSNDAFDI	16	3-11	2	QQRSNWYT	8	-	-	-
neGFP+M5 K33	4-34	6-13	3	5	GKGIAAAGYNWFDP	14	3-15	1	QQYNNWLTWT	10	+	+	-
neGFP+M5 K34	3-33	3-22	2	4	DAHYYDSSGYPPAYYFDY	18	1-5	3	QQYNSYLFT	9	-	+	-
neGFP+M5 K38	3-33	/	/	4	GQTVFDY	7	3-15	2	QQYNNWPYT	9	-	+	n
neGFP+M5 K42	4-34	3-16	1	4	GPAGELSLDY	10	3-11	5	QQRSNWLPIT	10	-	+	-
neGFP+M5 K48	3-33	3-16	3	4	DLYRVTFGGAIDY	13	1-5	2	QQYNSYPWT	9	-	+	-
	VH	D	RF	JH	CDR3(aa)	Length	Vλ	Jλ	CDR3(aa)	Length	Poly	Hep2	Staining
neGFP+M5 L5	3-23	4-17	2	2	DGYGDYYWYFDL	12	1-40	2	QSYDSSLSGSV	11	-	-	-
neGFP+M5 L7	3-64	/	/	4	WAGLGSYYFDY	11	3-21	2	QVWDSSSDHVV	11	-	-	-
neGFP+M5 L8	3-15	6-13	2	6	DRDSSSWTTYYYYYYMDV	18	2-14	1	SSYTSSSTLV	10	-	-	n
neGFP+M5 L9#	3-7	6-19	2	3	GRSSGWFDAFDI	12	3-21	2	QVWDSSSDHPV	11			
neGFP+M5 L12	3-7	3-10	2	6	DTTYYYGSGSYSDYYYYYMDV	21	1-51	2	GTWDSSLSAGV	11	-	+	-
neGFP+M5 L15	4-34	3-22	2	4	GYSDSSGVDY	10	2-14	3	SSYTSSSTLG	10	-	-	n
neGFP+M5 L24	3-64	3-3	2	2	DSSKDFWSGPWYFDL	15	2-14	2	SSYTSSSTLVV	11	-	-	-
neGFP+M5 L30	1-3	7-27	2	4	DSLGIDLPFDY	11	2-11	2	CSYAGSYTLV	10	-	+	-
neGFP+M5 L32#	3-30	6-19	2	4	VTSYSSGWYGIDY	13	2-14	2	SSYTSSSTLV	10			
neGFP+M5 L37	5-51	6-13	3	4	GIAAAGPFDY	10	1-44	1	AAWDDSHYV	9	-	-	-
neGFP+M5 L38					see Kappa		3-25	2	QSADSSGTYVV	11	-	+	-
neGFP+M5 L39	3-30	/	/	6	FHGDYYGMDV	10	3-21	1	QVWDSSSDHYV	11	+	+	-
neGFP+M5 L40	3-30	6-19	3	4	DHHRIAVADLFDY	13	3-21	2	QVWDSSSDHVV	11	-	-	-
neGFP+M5 L41	4-34	2-8	2	4	HRNCTNGVCYFDY	13	2-8	2	SSYAGSNNVV	10	-	-	-
neGFP+M5 L43	4-4	3-3	1	3	RFLEWLECAFDI	12	1-51	2	GTWDSSLSAVV	11	-	+	-
neGFP+M5 L46#	1-3	6-13	3	6	DGELNAAAAGYYYYGMDV	18	1-47	3	AAWDDSLSGWV	11			
neGFP+M5 L13							2-14	3	SSYTSSSIWV	10			
	VH	D	RF	JH	CDR3(aa)	Length							
neGFP+M5 H6	3-11	6-13	2	4	VYDSSTYYFDY	11							
neGFP+M5 H45	1-18	6-13	3	4	DLAAAGHGGY	10							

Supplementary Table 6, related to Figure 6 and 7. Repertoire and reactivity of antibodies from new emigrant B cells of PFTα treated NSG mic

Ig	HEAVY						LIGHT				REACTIVITY		
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	Hep2	Staining
neM9-PFTa K3	5-10	2-2	2	4	HVGYCSSTSCDDY	13	1-17	1	LQHNSYPWT	9	+	-	-
neM9-PFTa K8	3-7	2-8	2	2	VVDLPILGYCTGGVCDKRGWYFDL	24	3-20	2	QQYGSSPQYT	10	+	+	-
neM9-PFTa K16	4-39	3-10	2	5	TWRGSGSYYNATTRKDWFDP	20	3-15	1	QQYNNWPQT	9	+	+	-
neM9-PFTa K17	3-23	2-2	2	4	EDCSSTSCFDYFDY	14	3-20	3	QQYGSSPPLFT	11	-	-	-
neM9-PFTa K20	3-23	6-13	3	3	DRSIAAAGTGAAFDI	15	1-5	1	QQYNSYFWT	9	-	+	-
neM9-PFTa K27	3-48	/	/	4	SFLGLKWVDY	10	3-15	1	QQYNNWPQT	9	+	+	c
neM9-PFTa K36	4-34	7-27	2	6	EVTNWGSYYYMDV	13	1-8	4	QQYYSYPRS	9	+	+	-
neM9-PFTa K37	3-7	2-15	2	4	SSGGYCSGGSCYTLPYYFDY	20	3-20	2	QQYGSSPRYT	10	-	+	n
neM9-PFTa K41	1-69	2-21	2	3	GAYCGGDCNDAFDI	14	3-20	2	QQCGSSPYT	9	-	-	-
neM9-PFTa K42	4-39	6-13	3	2	DVLLAAAGNDWYFDL	15	1-5	2	QQYNSYSRT	9	+	-	-
neM9-PFTa K44	3-7	5-12	3	4	DGGRVATRATSFDY	14	3-15	2	QQYNNWPPMYT	11	-	-	-
neM9-PFTa K45	3-23	/	/	4	DSGWGAFDY	9	1-39	4	QQSYSTPQRDRLT	13	+	+	-
	VH	D	RF	JH	CDR3(aa)	Length	Vλ	Jλ	CDR3(aa)	Length	Poly	Hep2	Staining
neM9-PFTa L1	3-30	4-17	2	4	DEGGLAYFDDYGDYCPGDY	19	1-47	3	AAWDDSLSGWV	11	-	+	-
neM9-PFTa L3					see κ-chain	11	2-11	3	CSYAGSYTWV	10			
neM9-PFTa L6	1-2	6-6	2	4	DRAPFRSSSPHFDY	14	3-21	2	QVWDSSSDHVV	11	-	+	-
neM9-PFTa L7	1-18	/	/	4	ASTRYGADY	9	1-51	3	GTWDSSLSAWV	11	-	+	-
neM9-PFTa L9	3-23	/	/	4	VPYPQYYFDY	10	3-25	2	QSADSSGTSVV	11	-	-	-
neM9-PFTa L10	3-23	2-2	3	3	LVVPAAMRDAFDI	13	2-8	2	SSYAGSNIVV	10	-	-	-
neM9-PFTa L11	3-23	2-21	2	5	GAYCGGDCLLDWFDP	15	2-11	1	CSYAGSYTYV	10	+	+	-
neM9-PFTa L12#	4-34	3-10	2	4	GGDYYGSGSYLFNRKIQGSKGFDYYFDY	28	2-23	1	CSYAGSYV	8			
neM9-PFTa L18	3-23	6-13	3	4	QPAAGDY	7	2-14	2	SSYTSSSTVV	10	-	-	-
neM9-PFTa L22	1-18	7-27	1	4	VLLPIGLGMDY	11	1-51	1	GTWDSSLSAYV	11			
neM9-PFTa L24	4-61	3-10	3	4	EARVRRQGVIITSPYFDY	18	1-44	1	AAWDDSLNGPV	11	-	+	-
neM9-PFTa L25#	3-53	6-13	2	6	SGSSSSLHYYYYMDV	15	2-23	1	CSYAGSSPNYV	11			
neM9-PFTa L30#	1-3	6-6		6	GTDIAARPSEGYYYYGMDV	19	2-14	1	SSYTTSSTYV	10			
neM9-PFTa L33#	4-34	2-2	3	4	VTDIVVVPAAPRSPPCFDY	19	1-51	2	GTWDSSLSAVV	11			
neM9-PFTa L45					see κ-chain	13	1-40	2	QSYDSSLSGSV	11	-	-	-
neM9-PFTa L46	3-30	4-4	2	4	EGDYSNLAWRRYFDY	15	2-8	1	SSYAGSNNYV	10	-	-	-
neM9-PFTa L47	3-11	3-10	1	5	GGGVLWFRELLNNWFDP	17	2-14	2	SSYTSSSTVV	10	+	+	-
	VH	D	RF	JH	CDR3(aa)	Length	Vκ	Jκ	CDR3(aa)	Length	Poly	HEp2	Staining
neM10-PFTa K3	3-21	1-26	2	4	EQNSGSYYY	9	1-39	1	QQSYSTTWT	9	+	+	n
neM10-PFTa K8	3-30-3	1-26	2	4	VCVGSYYFDY	10	1-39	3	QQSYSTPFT	9	+	+	-
neM10-PFTa K9	1-2	6-13	3	3	DLRIAAAGDAFDI	13	3-15	5	QQYNNWPIT	9	-	+	-