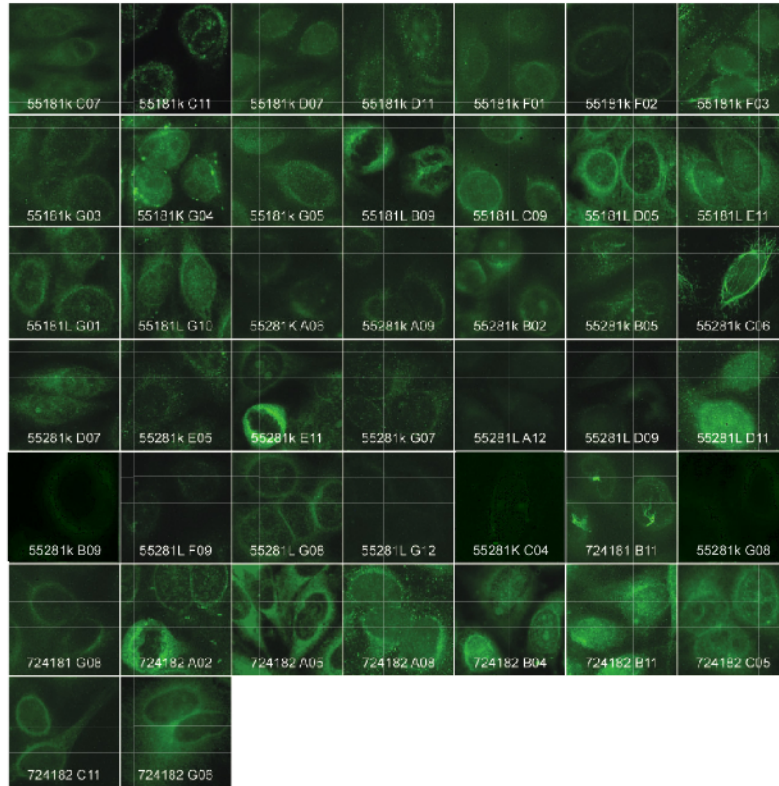
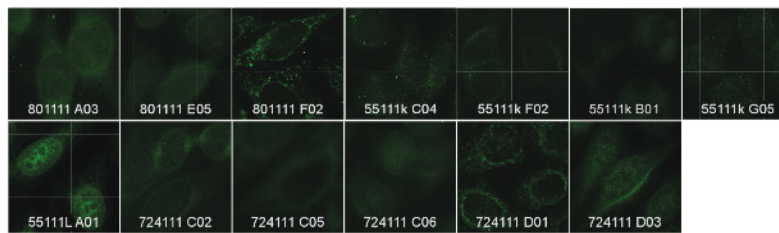


Supplementary Figure 1

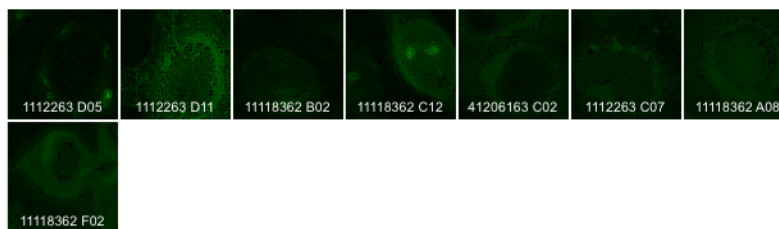
A Hep-2 reactive antibodies from Cδ-CS B cells



B Hep-2 reactive antibodies from naïve B cells:



C Hep-2 reactive antibodies from IgG memory B cells:



Cδ-CS Clones

Heavy Chains	FWR1	CDR1	FWR2	CDR2	FWR3	CDR3	FWR4
Anti-DNA-1:	QVQLVESGGGVQVPGRSRLRSCAASGFTFS	SYGMH	WVRQAPGKGLEWVA	VISYDGSNKYYADSVKGG	RFTISRDNKNTLYLQMNSLRAEDTAVYYCAK	LNIRLLSYYGMDV	WGQGTTLVTVSS
Anti-DNA-2:	QVQLQQWAGALLKPS ^E TLSLTCAVYGGSF	GYYS	WIRQPPGKGLEWIG	EINHSSTNYNPSLKS	RVTISVDTSKNQFSLKLSVSTAADTAVYYCAR	PRFIAARPOAKRNWFD ^P	WGQGTTLVTVSS
Anti-DNA-3:	QVQLVQSGAEVKKPGASVKVSCRASGYTFT	GYMH	WVRQAPGQGLEWVG	WINPNSGGTNYAQKFGG	RVTMT ^R DTSTISAYMELSLRSDDTAVYYCAR	DGGYGDYVGY	WGQGTTLVTVSS
Anti-DNA-4:	EVQLVQSGAEVKKPGESL ^I ISCKGSGYSFT	NYWIS	WVRQMPGKGLEWVG	RIDPDSYTNYS ^P SPFQG	HVTISADK ^S ISTAYLQWSSLKASDTAMYCAR	RPPISSYYEYGM ^D V	WGQGTTLVTVSS
Anti-DNA-5:	QVQLVQSGAEVKKPGASVKVSCRASGYTFT	NYGIS	WVRQAPGQGLEWVG	WISAYS ^G NTNYAQNLQD	RVTMT ^T DTSTSTAYMELSLRSDDTAVYYCAR	GYIYNSGSQFYFYGM ^D V	WGQGTTLVTVSS
Anti-DNA-6:	QVQLQQWAGALLKPS ^E TLSLTCAVYGGSF	GYYS	WIRQAPGKGLEWIG	EINHSSTNYNPSLKS	RVTMLDTSKIQFSLNLT ^S VTAADTAVYYCAR	GLRGTTRFNYYGM ^D V	WGQGTTLVTVSS
Anti-DNA-7:	EVQLVESGGGVQVPGGSRLRSCAASGFTFS	IYWMS	WVRQAPGKGLEWVA	NIKQDGS ^E KYYVDSVKG	RFTISR ^D YAE ^N SLYLQMNSLRAEDTAVYYCAS	SPNYD ^W SGY ^I NAHW ^F DP	WGQGTTLVTVSS
Anti-DNA-8:	QLQLQESGPGLVKPS ^E TLSLTCTVSGGSIS	TSYYWA	WIRQPPGKGLEWIG	SIYYS ^G TYYNPSLKG	RVTISD ^D TFKNQFSL ^L TLSVTAADTAVYYCAR	GRPIIYSDNNK ^I L	WGRGTLVTVSS
Anti-DNA-9:	EVQLVESGGGLV ^K PGGSLRRLSCAASGFTYS	NTWMN	WVRQAPGKGLEWVG	RIK ^R K ^F EGE ^T RDYAAPV ^K G	RFTISR ^D DSKNTLYLQMN ^S LQ ^T EDTAVYFCTS	DTTSTSDYGM ^D I	WGP ^G TTLVTVSS
Anti-DNA-10:	QVQLQESGPGLVKPS ^E TLSLTCTLSGG ^S IN	SEYWS	WIRQPPGQGLEWIG	YIYYTGSANYS ^P SLKS	RVTIS ^K DTSNQFSL ^R LTSVTAADTAVYYCAR	TIDGYGN ^R FFYGM ^D V	WGQGTTLVTVSS
Anti-DNA-11*:	EVQLLES ^G GGLVQPGGSLRRLSCGASGFTFS	TYTMT	WVRQAPGKGLEWVS	LISGGSGDTFYADSVKGG	RFTISR ^R NNSKNTLFLQMN ^S LRV ^E DTAVYYCAK	ALRNLGDNQYSALH ^V	WGQGTTLVTVSS
Anti-DNA-12*:	EVQLLES ^G GGLVQPGGSLRRLSCGASGFTFS	TYTMT	WVRQAPGKGLEWVS	LISGGSGDTFYADSVKGG	RFTISR ^R NNSKNTLFLQMN ^S LRV ^E DTAVYYCAK	ALRNF ^G DNQYSALH ^V	WGQGTTLVTVSS
Anti-DNA-13:	QVQLQQWAGALLKPS ^E TLSLTCAVYGG ^P LN	TYFWT	WIRQPPGKGLEWVG	E ^A NHRG ^I SNY ^N PSL ^E S	RVTISV ^E TSK ^K YFSL ^R LSVSTAADTAVYFCAR	KDTGT ^Y FLGAS ^Y YYGL ^D V	WGQGTTLVTVSS
Anti-DNA-14:	QVQLQQWAGALLKPS ^E TL ^L LTCNVYGA ^S FT	GYHWS	WLRQSPGKGLEWIG	E ^I SHY ^R T ^N Y ^S PSL ^G R	RVTMS ^F TTSKNQFSL ^R LTS ^L TAADTAVYYCAR	GLV ^K GG ^D SLTVVAGGAI ^S FR ^Y	WGQGTTLVTVSS
Anti-DNA-15:	QVQLVESGGGVQVPGMSLRLSCASLFTFS	YSGMH	WVRQAPGKGLEWVA	FIS ^K DGVN ^K YFADSVKGG	RFTISR ^E K ^K R ^R LLYLHMS ^S LRV ^E DTAIYFCAR	NSDNMSAHHHNFY ^M DV	WGT ^G TTLVTVSS
Anti-DNA-16:	QVQLVQSGAEVKKPGASLRISCKASGYTFT	SSAAH	WVRQAPGQRLEWVG	WINTGHGDTTYSQK ^F QG	RVT ^F SRDTSAN ^I AYM ^Q L ^T GLT ^S EDTAVYYCAT	EDVATSGGNALH ^F	WGQGTTLVTVSS
Anti-DNA-17:	QVQLQEWGATLLKPS ^E TLRLSCTAFGLN ^L R	TYGMH	WVRQARGKLEWVA	VTLQD ^G KR ^Q YYR ^D SVKGG	RFTISR ^R NNSKNTLFLQMN ^S LRV ^E DTAVYYCAT	GTLAAV ^E EQLPY ^F DF	WGQGTTLVTVSS
Anti-DNA-18:	QVQLQQWAGALLKPS ^E TLSLTCAVYGVSS ^R	RYWMS	WIRQPPGKGLEWIG	D ^I YRRGGANYS ^P SL ^K N	RVTMS ^L DS ^S GSQFSL ^R LSVSTAADTGLY ^C AR	GPDALEATHDYS ^S SM ^H V	WKG ^G TTLVTVSS
Anti-DNA-19:	EVQLVESGGGLV ^K PGGSLRRLSCASGFTFR	NAWMN	WVRQAPGKGP ^E WIG	L ^I K ^R K ^V DGAT ^T NYAAPV ^K G	RFTISR ^D DSK ^N LYLQMN ^S SLK ^T EDTAVYYCTT	GLINS ^G WLSTFD ^Y	WGQGTTLVTVSS
Anti-DNA-20:	QVQLQEWGATLLKPS ^E TLSLTCAVYGG ^S FG	GSYWS	WVRQARGKLEWIG	D ^I IQGGNSNY ^S PSL ^K G	RATNS ^L SDTSKNLLS ^L LTSVTAADTAVYYCAR	VGGND ^F GN ^Y ETPPY ^A MD ^V	WGQGTTLVTVSS
Anti-DNA-21:	QVQLVESGGGVQVPGRFLRLSCAVSGFTFS	HFDMH	WVRQAPGKGP ^E WMA	FIS ^S DGRK ^K DY ^E DSV ^K G	RFTISR ^D NSR ^E VLYVHLTSL ^R V ^E DTAVYECV ^K	GRG ^D LEPF ^F DT	WGQGTTLVTVSS
Anti-DNA-22:	QLVLQESGSGLVKPS ^Q ALSLTCAVSGGS ^F S	SGDYWS	WIRQPPGKGLEWIG	N ^I FHS ^G ITYYNS ^S SL ^K S	RVSISVDRSKNQFSLKLSVSTAADTAIYCAR	IDFGTMS ^F DS	WGQGTTLVTVSS
Light Chains							
Anti-DNA-1:	DIQMTQSPSTLSASVGD ^R VTITC	RASQSISSWLA	WYQQKPGKAPKLLIY	KASSLES	GVPSRFSGSGSTEFLTITISSLQPD ^F FATYYCQ	QYNSYLYT	FGQGT ^K VE ^I K
Anti-DNA-2:	EIVMTQSPATLSVSPGERATLSC	RASQSVSSNLA	WYQQKPGQAPRLLIY	GASTRAT	GIPARFSGSGSGTEFLTITISSLQSE ^D FVAVYYCQ	QYNNWPLT	FGGGT ^K VE ^I K
Anti-DNA-3:	DIQMTQSPDLSAVLGERATINC	KSSQSVLYSSNKNK ^N YLA	WYQQKPGQPPKLLIY	WASTRES	GVPDRFSGSGSGTDFTLITISSLQAE ^D VAVYYCQ	QYYSTSWT	FGQGT ^K VE ^I K
Anti-DNA-4:	QSVLTQPPPSASGTPGQRVTI ^S C	SGSSSNIGSN ^T VN	WYQLPFGTAPKLLIY	SNNQRPS	GVPDRFSGSKSGTSASLAI ^S GLQSE ^D EADYYCA	AWD ^D SLNGHY ^V	FGTGT ^K VT ^V L
Anti-DNA-5:	EIVMTQSPATLSVSPGERATLSC	RASQSVSSNLA	WYQQKPGQAPRLLIY	GASTRAT	GIPARFSGSGSGTEFLTITISSLQSE ^D FVAVYYCQ	LYNNWPWT	FGQGT ^K VE ^I K
Anti-DNA-6:	DIQMTQSPSSLASVGD ^R VTITC	RASQSI ^L SYLN	WYQQKPGKAPKLLIY	FESSLOS	GVPSRFSGSGSGTDFTLITISSLQPE ^D FATYYCQ	QSYSTPYT	FGQGT ^K VE ^I K
Anti-DNA-7:	EIVMTQSPGTLSVSPGERATLSC	RASQSVGSNLA	WYQQKPGQAPRLLIH	GASTRAT	GIPARFSGSGSGTEFLTITISSLQSE ^D DSAIYYCQ	QYNNWPFEGT	FGQGT ^K VE ^I K
Anti-DNA-8:	DIQMTQSPSTLSASVGD ^R VTITC	RASQSIGWVA	WYQQKPGKAPKLLIY	KASTLES	GVPSRFSGSRGTE ^F FLTITISSLQPD ^F FATYYCQ	QYNTYWT	FGQGT ^K VE ^I K
Anti-DNA-9:	QSVLTQPPPSASGTPGQRAT ^I SC	SGSSSNIGR ^K TVN	WYQQLPGAAPKLLIY	GNDRRPS	GVPDRFSGSKSGTSASLAI ^S GLQSE ^D EADYYCA	AWD ^D SLINAY ^V	FGTGT ^K VT ^V L
Anti-DNA-10:	EIVLTQSPATLSLSPGERATLSC	RASQSI ^T YVA	WYQQKPGQAPRLLIY	DASNRRAT	GIPARFSGSGSGTDFTLITISSLAPD ^F FVAVYYCQ	QR ^T NWPR ^S F ^T	FGQGT ^R LE ^I K
Anti-DNA-11*:	AIQMTQSPSSLASVGD ^T VTITC	RASQGI ^K DLG	WYQQKPGKAPKLLIY	RASNLP ^I	GVPSRFSGSGSGTHFTLITIS ^R LQPE ^D FATYYCL	QDFNPFPT	FGPGT ^K V ^D IK
Anti-DNA-12*:	AIQMTQSPSSLASVGD ^T VTITC	RASQGI ^I RDLG	WYQQKPGKPPKLLIY	SASNLP ^I	GVPSRFSGSGSGTHFTLITIS ^R LQPE ^D FATYYCL	QDFNPFPT	FGPGT ^K V ^D IK
Anti-DNA-13:	EIVLTQSPGTLSLSPGERATLSC	RASQSIDNNYLA	WYQQKPGQAPRLLLY	GASTRAT	GIPDRFSGSDSGTDFTLITIT ^R LEPE ^D FVAVYYCQ	QY ^G SSPNT	FGPGT ^K V ^D IK
Anti-DNA-14:	QSVLTQPPPSVSAAPGQKVTI ^S C	SGSGSNIGNNS ^V S	WYQQPPPAAPKLLMY	DNNKRRPS	GIPERFSGSKSGTAA ^T LGLITGLQ ^T GDEADYYCG	TWD ^S SLSE ^V L	FGGGT ^K LT ^V L
Anti-DNA-15:	QSALTQPPPSASGSPGQSVTI ^S C	TGTTSDVGG ^L TSVS	WYQHHPGKPKLLIY	EVT ^K RRPS	GVPDRFSGSKSGNSASLTVSGLQAE ^D EADYYCS	SDG ^D NND ^V L	FGGGT ^K LT ^V L
Anti-DNA-16:	QSVLTQPPPSVSGAPGQRVTI ^S C	TGNNNSI ^G AGF ^D VH	WYQQLPGTAPRLLIY	RSIYRPS	GVPDRFSASRSATSASLAI ^T GLQPE ^D EGDYFCQ	SYHISLSAYAV	FGGGT ^K LT ^V L
Anti-DNA-17:	DIQMTQSPSTLSASVGD ^R VNITC	RASQSI ^S RWLA	WYQQE ^P PGKAPKLLIY	KTSTLPS	GVSSRFSGSGSGTEFLTITISSLQPE ^D FLTYCYCQ	QY ^D YPGT	FGQGT ^K VE ^I K
Anti-DNA-18:	QSALTQPPPSASGTPGQSVTI ^S C	TATSSDFG ^D NEHS	WYQQDFGKAPRLLIY	DVTRRPS	AVPDRFSGSKSGNTASLTVSGLQPD ^E EADYYCS	SYAGNNFL	FGGGT ^K LT ^V L
Anti-DNA-19:	DIQMTQSPSSLFASIG ^D RVTITC	RTSQININ ^N YLN	WYQQKLG ^E APRLLIS	RAF ^D LQ ^T	GVSPRFSGSGSGTDFSLTIS ^R LHP ^E DSGIYFCQ	QTYSPFPT	FGPE ^T KV ^D IK
Anti-DNA-20:	QSALTQPPPSASGSPGQSVTI ^S C	TGSDSL ^D LGTS ^D YVS	WYQQY ^P PKAPKLLIY	GLNLRPS	GVPIRFSGSKSGNTASLTVSGLQSE ^D EADYYCS	SYYGS ^H NL ^V L	FGGGT ^K LT ^V L
Anti-DNA-21:	DIQMTQSPSTLSASVGD ^T VTITC	RASQNI ^R NYLA	WYQQKPGKAP ^E LLIY	QSNLYPS	GVPSRFSGAE ^F TEFLTITISLQAD ^F FATYYCQ	QYKTLWT	FR ^G GT ^K VE ^I K
Anti-DNA-22:	QLVLTQSPSASASL ^G ASV ^K LTC	TLSSGSHSYAIA	WHQQQPE ^K GPRY ^L MK	LNSDGSHT ^K GD	GIPDRFSGSSGSAER ^Y LITISSLQSE ^D EADYYCQ	TWATGI ^Q V	FGGGT ^K LT ^V L

R = Arginine **E** = Glutamic Acid
D = Aspartic Acid Underline = Somatic Mutation
K = Lysine Highlight = Mutation Removed an Arginine

Supplementary Figure 1. Antibodies from C δ -CS B cells bind various antigens on HEp-2 cells with more intensity and frequency than antibodies from naive or IgG memory B cells. Micrographs of 63X magnification fields of the various C δ -CS (A), naive (B), and IgG memory (C) antibodies that bound HEp-2 slides as quantified in Figure 2A.

Supplementary Figure 2. The amino acid sequences of all clones reactive to DNA are compared from C δ -CS B cells. The sequences are sectioned into framework regions 1, 2 and 3 (FWR1, FWR2, and FWR3) and complementarity determining regions 1 and 2 (CDR1, and CDR2). The accumulation of charged amino acids (particularly arginine) is known to affect binding to DNA. Asterisks indicate a pair that is clonally related but has different mutations, and the color blue indicates the clones that were reverted to germline sequence for the experiments in Figure 5C. Underlined residues were introduced by mutation.