Supplemental material

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Gene expression profiling (GEP)

Nanostring

400ng (10µl at 40ng/µl) of total RNA from FFPE samples were processed using Gene Expression Lymph2Cx NanoString Assay. Samples were then incubated in a PCR machine, for 16 hours at 67ºC. Next morning, on the deck of the NanoString nCounter Prep Station, purified Target/Probe complexes are eluted off and are immobilized in the cartridge for data collection on the nCounter Digital Analyzer. Digital images are processed on the nCounter Digital Analyzer and the barcode counts are tabulated in a comma separated value (CSV) format, which can be downloaded via a memory stick. Analysis was performed using nSolver 2.5 software.

HTG

Next generation sequencing (NGS-)based gene expression profiling (GEP) was done to classify the DLBCL samples into GCB, ABC or unclassifiable subtypes using the HTG EdgeSeq System (HTG Molecular Diagnostics Inc., Tucson, AZ, USA). HTG gene expression data was generated using the HTG EdgeSeq DLBCL Cell of Origin Assay IT for Ion Torrent platform (Ion GeneStudio S5 prime, Thermo Fisher Scientific, Waltham, MA, USA). Starting material was tissue sections using 5 µm formalin-fixed paraffin embedded (FFPE) sections according to the manufactures protocol. Target capture, final libraries and semiconductor sequencing were performed with KAPA Library Quantification Kit, the Ion 510 & Ion 520 & Ion 530 Kit – Chef and the Ion 520 Chip Kit (Thermo Fisher Scientific, Waltham, MA, USA) according to the HTG recommendations, prepared for sequencing for Ion Torrent platform (F. Hoffman - La Roche AG, Basel/Kaiseraugst, Switzerland). The HTG EdgeSeq DLBCL panel measures the expression of 92 genes associated to B-cell lymphomas. The COO classification was performed using the HTG Edge System software (Version 5.5.823.5747). The HTG algorithm is trained to minimise the unclassifiable subgroup when compared with other methods [1].

Mutational analysis - targeted Next Generation Sequencing

SureSelectXT approach

A total of 46 FFPE DNA samples were processed using SureSelectXT (Agilent Technologies, Santa Clara, CA) and using a panel design described in Supplemental Table 1. A total of 100ng of genomic DNA was sheared using the Covaris S220 focused-ultra sonicator (Covaris, Woburn, MA) to a target peak size of 150–200 bp. Library preparation were performed using SureSelectXT Custom Capture Library baits as described in SureSelectXT Target Enrichment System protocol (Agilent Technologies inc). For amplification of the post capture libraries, 10

to 13 cycles were performed depending on the initial sample quality. The libraries were qualified using the Bioanalyzer HS (Agilent Technologies inc.), quantified with the KAPA Library Quantification Kit (Kapa Biosystems, Wilmington, Massachusetts) and sequenced in a MiSeq instrument (Illumina, San Diego, CA) in a paired-end run of 150 bp. The average sequencing coverage of the 46 cases across regions was 873x (range 26-2693x).

FASTQ files were generated by MiSeq control software and quality control of the raw data was performed using the FastQC tool. Sequencing reads were subsequently aligned to the human reference genome (GRCh37/hg19) using the Burrows-Wheeler Aligner–MEM algorithm[2] Variant calling was performed using two different variant callers, Somatic Variant Caller (Illumina inc.) and Mutect2 (Genome Analysis Toolkit-GATK version 4.0.3)[3] and annotated using the VariantStudio software v3.0 and ANNOVAR, respectively.[4] Quality calls were excluded. For Mutect2 variants, low quality variants were also excluded using FilterMutectCalls (GATK) with default thresholds. We excluded non-interrogated variants (non-exonic) and known polymorphisms described in the GenomeAD, 1000Genomes and/or ExAC database (release 2015) with more than 1% frequency and synonymous variants. Finally, each variant was also visually inspected with the Integrative Genomics Viewer (IGV, Broad Institute, version 2.3) software to exclude artifacts.

AmpliSeq approach

Targeted mutation analysis was performed by Next Generation Sequencing (Ion GeneStudio S5 prime, Thermo Fisher Scientific) using an AmpliSeq Custom Panel designed for DLBCLs (Supplemental Table 2). Amplicon library preparation and semiconductor sequencing was done according to the manufacturers' manuals using the Ion AmpliSeq Library Kit v2.0, the Ion Library TaqMan Quantitation Kit, the Ion 510 & Ion 520 & Ion 530 Kit – Chef, the Ion 520 Chip Kit and the Ion 530 Chip Kit (Thermo Fisher Scientific) as described before.[5]

Variant calling of non-synonymous somatic variants compared to the human reference sequence was performed using Ion Reporter Software (Thermo Fisher Scientific, Version 5.10.1 to Version 5.16.0.2). Variants were filtered with a threshold allele frequency of 5%. Variants called by the Ion Reporter Software were visualized using the Integrative Genomics Viewer (IGV; Broad Institute, Cambridge, MA; Version 2.8.0) to exclude panel-specific artefacts.

Prediction of mutation effect

Since no germline DNA was available and in order to select somatic variants, potential driver mutations were predicted according to previously published criteria in which the 90% of the

mutations classified as functional were demonstrated to be somatic.[6] Inclusion criteria were: 1) any variant described previously as somatic or functional on previous reports or COSMIC, 2) all truncating variants (nonsense, frameshift, splice donor or acceptor mutations; and 3) the remaining missense variants that were predicted to be functionally deleterious using Mutation Assessor[7] or SIFT predictor (http://sift.jcvi.org/) if a definitive score was not provided by Mutation Assessor.[8]

DNA copy number (CN) alterations analysis

CN regions of alteration with minimum size of 100 kb and CNN-LOH larger than 5 Mb were considered informative. Physiological deletions of the immunoglobulin loci were excluded from the analysis (Supplemental Table 7).

Statistical methods

Differences in the distribution of individual parameters among patient subsets were analyzed by Fisher's exact test for categorized variables, and the Student's t-test for continuous variables (Supplemental Methods). Only mutations and genomic aberrations present in 5% of the cases and affecting a minimum of four cases were accounted for comparisons. The *P*-values for multiple comparisons were adjusted using the Benjamini–Hochberg correction (false discovery rate, FDR). A cut-off of *P*=.05 was considered significant. Statistical analyses were performed using R software v3.5.0.

Survival probabilities were estimated with the Kaplan–Meier method and differences assessed by the log-rank test. Event free survival (EFS) was calculated as previously described.[24]

Supplemental Table 1. SureSelectXT 66 genes for the analysis of DLBCL

Gene Symbol	Transcript	Interval[1]	Exons and flanking regions[2]	Pathway	Total Size (bp)
ACTB	NM_001101.3	chr7:5567379-5569288	All CDS E2-6		1128
ARID1A	NM_006015.4	chr1:27022895-27107247	All CDS E1-20	Epigenome/Chromatin modifier	6858
ATM	NM_000051.3	chr11:108098352-108236235	All CDS E2-63		9171
B2M	NM_004048.2	chr15:45003745--45008540	All CDS E1-3	Immune Response	360
BCL10	NM_003921.4	chr1:85733310-85742035	All CDS E1-3	NFkB pathway	702
BCL2	NM_000633.2	chr18:60795858-60985899	All CDS E1-2		720
BCL6	NM_001706.4	chr3:187440245-187451481	All CDS E3-10	B-cell differentiation	2129
BRAF	NM_004333.4	chr7:140453075-140481493	E11-15	MAP-kinase pathway	546
BTG1	NM_001731.2	chr12:92537856-92539311	All CDS E1-2		516

BTG2	NM_006763.2	chr1:203274735-203276566	All CDS E1-2		477
BTK	NM_000061.2	chrX:100604873-100630272	All CDS E2-19	NFkB pathway	1980
CARD11	NM_032415.4	chr7:2946272-2998140	All CDS E2-25	NFkB pathway	3465
CCND3	NM_001760.3	chr6:41903678-41909387	All CDS E1-5		879
CD58	NM_001779.2	chr1:117057435-117113594	All CDS E1-6	Immune Response	753
CD70	NM_001252.3	chr19:6586031-6591013	All CDS E1-3		582
CD79A	NM_001783.3	chr19:42381375-42385047	All CDS E1-5	NFkB pathway	681
CD79B	NM_001039933.2	chr17:62006585-62009621	All CDS E1-6	NFkB pathway	699
CIITA	NM_000246.3	chr16:10971188-11017160	All CDS E1-19	Immune Response	3393
CREBBP	NM_004380.2	chr16:3777719-3929917	All CDS E1-31	Epigenome/Chromatin modifier	7329
DDX3X	NM_001356.3	chrX:41193506-41206972	All CDS E1-17		1989
DIS3	NM_014953.3	chr13:73333933-73355970	All CDS E1-21		2877
EP300	NM_001429.3	chr22:41489009-41574960	All CDS E1-31	Epigenome/Chromatin modifier	7245
ETS1	NM_001143820.1	chr11:128332256-128443025	All CDS E2-10	MAP-kinase pathway	1458
ETV6	NM_001987.4	chr12:11803062-12043980	All CDS E1-8		1359
EZH2	NM_004456.4	chr7:148504738-148508812	E16-20	Epigenome/Chromatin modifier	405
FBXW7	NM_033632.3	chr4:153244033-153332955	All CDS E2-12	NOTCH pathway	2124
FOXO1	NM_002015.3	chr13:41133660-41240349	All CDS E1-2		1968
GNA13	NM_006572.4	chr17:63010375-63052711	All CDC E1-4	PI3K-AKT-mTOR pathway	1134
HIST1H1D	NM_005320.2	chr6:26234496-26235161	All CDS E1	Epigenome/Chromatin modifier	666
HIST1H1E	NM_005321.2	chr6:26156619-26157278	All CDS E1	Epigenome/Chromatin modifier	660
ID3	NM_002167.4	chr1:23885451-23885917	All CDS E1-2	PI3K-AKT-mTOR pathway	360
IRF4	NM_002460.3	chr6:393153-407598	All CDS E2-9	B-cell differentiation	1356
IRF8	NM_002163.2	chr16:85936622-85954888	All CDS E2-9	B-cell differentiation	1281
KLHL6	NM_130446.2	chr3:183209715-183273441	All CDS E1-7		1866
KMT2D	NM_003482.3	chr12:49415563-49449107	All CDS E1-54	Epigenome/Chromatin modifier	16614
KRAS	NM_033360.2	chr12:25368375-25398318	All CDS E2-5	MAP-kinase pathway	570
MAP2K1	NM_002755.3	chr15:66679686-66782953	All CDS E1-11	MAP-kinase pathway	1182
MAPK1	NM_002745.4	chr22:22123493-22221730	All CDS E1-8	MAP-kinase pathway	1083
MEF2B	NM_001145785.1	chr19:19256606-19261544	All CDS E2-9	Epigenome/Chromatin modifier	1107
MYC	NM_002467.4	chr8:128748840-128753674	All CDS E1-3	Cell cycle	2989
MYD88	NM_002468.4	chr3:38180153-38182777	All CDS E1-5	NFkB pathway	930
NFKBIE	NM_004556.2	chr6:44226956-44233500	All CDS E1-6	NFkB pathway	1503
NOTCH1	NM_017617.3	chr9:139390023-139399556	E26-27, 34 + 3'UTR	NOTCH pathway	2568

NOTCH2	NM_024408.3	chr1:120457929-120459317	E34	NOTCH pathway	1389
NRAS	NM_002524.4	chr1:115251156-115258781	All CDS E2-5	MAP-kinase pathway	570
PCBP1	NM_006196	chr2:70314876-70315946	All CDS E1		1071
PIK3CD	NM_005026.3	chr1:9770513-9787104	All CDS E3-24	PI3K-AKT-mTOR pathway	3157
PIM1	NM_001243186.1	chr6:37138079-37141867	All CDS E1-6		1214
POU2F2	NM_001207025.2	chr19:42595704-42636563	All CDS E1-14		1392
PRDM1	NM_001198.3	chr6:106534429-106555361	All CDS E1-7	B-cell differentiation	2478
PRKCB	NM_002738.6	chr16:23847497-24226137	All CDS E1-17		2022
SETD2	NM_014159.6	chr3:47058583-47205414	All CDS E1-21		7695
SGK1	NM_001143676.1	chr6:134491406-134638598	All CDS E1-14	NOTCH pathway	1581
SMARCA4	NM_001128844.1	chr19:11132400-11144541	E20-28		1266
SOCS1	NM_003745.1	chr16:11348699-11349335	All CDS E2	JAK-STAT pathway	637
STAT3	NM_139276.2	chr17:40467763-40500534	All CDS E2-24	JAK-STAT pathway	2313
STAT6	NM_001178078.1	chr12:57490355-57502061	All CDS E2-22	JAK-STAT pathway	2544
TBL1XR1	NM_024665.4	chr3:176743285-176782765	All CDS E3-16		1559
TCF3	NM_003200.3	chr19:1611706-1650247	All CDS E2-19	PI3K-AKT-mTOR pathway	1965
TET2	NM_001127208.2	chr4:106155099-106197676	All CDS E3-11	Epigenome/Chromatin modifier	6018
TMEM30A	NM_018247.3	chr6:75965818-75994354	All CDS E1-7		1086
TNFAIP3	NM_006290.3	chr6:138192365-138202456	All CDS E2-9	NFkB pathway	2373
TNFRSF14	NM_003820.2	chr1:2488104-2494712	All CDS E1-8		852
TNIP1	NM_001252390.1	chr5:150410274-150444656	All CDS E2-18		1911
TP53	NM_000546.5	chr17:7572927-7579912	All CDS E2-11	Cell cycle	1182
XBP1	NM_005080	chr22:29191534-29196512	All CDS E1-5	B-cell differentiation	786

CDS: coding sequence; E: exons

Supplemental Table 2. AmpliSeq Custom Panel used for the analysis of DLBCL.

	Transcript	Position (GRCh37/hg19)	Exon(s)	Amplicons*	Coverage of CDS (%)
EZH2	NM_004456	chr7:148,508,712 – chr7:148,508,789	16	1	-
CD79B	NM_001039933	chr17:62,006,789 - chr17:62,006,840	5	1	-
CD79B		chr17:62,006,586 - chr17:62,006,654	6	1	-
MYD88	NM_002468	chr3:38,181,874 – chr3:38,182,064	3	4	-
MYD88		chr3:38,182,243 – chr3:38,182,344	4	2	-
MYD88		chr3:38,182,618 – chr3:38,182,726	5	2	-
CARD11	NM_032415	chr7:2,946,272 - chr7:2,998,140	CDS	54	95,30
IRF4	NM_002460	chr6:393,153 – chr6:407,598	CDS	18	95,61
BCL2	NM_000633	chr18:60,795,858 - chr18:60,985,899	CDS	9	95,86
TNFAIP3	NM_006290	chr6:138,192,365 – chr6:138,202,456	CDS	29	96,49
PRDM1	NM_001198	chr6:106,534,429 – chr6:106,555,361	CDS	29	91,66
BCL6	NM_001706	chr3:187,440,246 - chr3:187,451,481	CDS	27	92,14
PIM1	NM_001243186	chr6:37,138,079 – chr6:37,141,867	CDS	16	90,98

*The amplicon lengths range between 125-175 bp;CDS: coding sequence.
coverage of the panel in total: 94,23%
amplicons in total: 193
amplicons pool 1: 98
amplicons pool 2: 95

Supplemental Table 3. Clinical data of 55 of diffuse large B-cell lymphomas with aberrant co-expression of CD10, BCL6 and MUM1

Case #	Sex	Age	Localization	Clinical stage	IPI	Treatment	R/R	Follow-up
1	M	63	cervical LN	III	low-inter	6x R-CLIP + RTX	No	36 mo NED
2§	M	67	testis	IV	high	4x R-CHOP+ 4x R-MTX+ RTX	yes	19 mo LFU*
4	F	80	cervical LN	NA	NA	N/A	NA	NA
5§	F	37	submandibular LN	I	low	6x R-CHOP+ 2x R	No	49 mo NED
6	F	75	nose/ Waldeyer ring	IV	NA	6x R-CHOP+ 2x MTX	No	44 mo NED
7	F	59	uterine tumor	II	low-inter	6x R-CHOP+ 2x R	No	32 mo NED
8	F	71	colon	IE	low	6x R-CHOP + 2x R	Yes	4 mo DOD
9	M	70	cervical LN	I	NA	6x R-CHOP + 2x R	Yes	12 mo LFU
10§	F	37	tonsil	I	low	6x R-CHOP 2x R	No	32 mo NED
11§	F	67	retroperitoneal mass	IV	high	6x R-CHOP 2x R	No	25 mo NED
12	F	44	breast	IE	low	6x R-CHOP+RTX	No	62 mo NED
13	M	71	testis	NA	NA	4x HD-AraC,	Yes	21 mo DOD
14	F	72	breast	NA	low	6x R-CHOP+RTX	Yes	12 mo LFU
15	M	84	upper eyelid	NA	NA	NA	NA	NA
16§	M	62	inguinal LN	III	low	6x R-CHOP 6x R	No	76 mo NED
17	M	86	oral mucosa/ Waldeyer ring	IV	high-inter	6x R-miniCHOP+ 2x R	No	7 mo LFU
20	M	77	tonsil	NA	NA	NA	NA	NA
21	F	78	ileum	II	NA	Hemicolectomy	NA	LFU
22	F	77	LN	I	low	NA	NA	16 mo LFU
23	F	63	stomach -colon -pancreas	IV	high-inter	5x R-CHOP+ 3x R	Yes	12 mo DOD
25§	M	49	abdominal LN	III	low-inter	6x R-CHOP	No	58 mo NED
26§	F	55	mesenteric LN	II	low	6x R-CHOP	No	56 mo NED

27	F	49	inguinal LN	IV	high-inter	6x R-CHOP	No	57 mo NED
31§	F	79	stomach	IV	high	1x R-CHOP	NA	1 mo LFU
32	M	55	submandibular LN	II	low	6x R-CHOP	No	40 mo NED
33	F	54	stomach	IV	low-inter	BURKIMAB	No	39 mo post ASCT NED
34	F	65	axillar LN	IV	N/A	6x R-CHOP	Yes	36 mo NED
35	M	47	mediastinal mass	II	low	6x R-CHOP + RTX	No	26 mo NED
38§	F	78	pre-aortic LN	IV	high	1x R-CHOP	Yes	5 mo DOD
39	M	81	inguinal LN	IV	high	6x R-CHOP	Yes	8 mo DOD
40	M	38	cavum nasi/ Waldeyer ring	I	low	6x R-CHOP	No	25 mo NED
41	M	72	cervical LN	IV	low-inter	6x R-CHOP	No	23 mo NED
44§	F	38	tonsil	NA	NA	6x R-CHOP+RTX	No	23 mo NED
45	M	45	thigh	II	low-inter	6x R-CHOP	Yes	19 mo DOD
46	F	59	liver	IV	low-inter	6x R-CHOP + MTX	No	16 mo NED
47	F	71	paraaortic LN	I	low-inter	6x R-CHOP	No	44 mo NED
48	F	78	spleen	I	low-inter	6x R-CHOP	No	17 mo NED
49	F	70	cervical LN	NA	NA	6x R-CHOP	No	7 mo NED
50	F	66	bone marrow	IV	high	BURKIMAB	Yes	7mo DOD
51	M	72	Ethmoidal sinus/ Waldeyer ring	IV	high-inter	4x R-CHOP	No	6 mo DOC
52	M	63	abdominal wall mass	IV	low-inter	RTX, R-CEOP	No	14 mo LFU
54	M	61	left 8th rib	I	Low	3x R-CHOP	No	43 mo NED
57	M	70	testis	NA	NA	NA	NA	NA
58	F	92	LN	NA	NA	NA	NA	NA
60	F	64	left hip tissue	IV	low-inter	6x R-EPOCH	No	24 mo NED
61	M	87	paraspinal mass	III	high	6x R-CHOP+RTX	NO	NA
62	F	74	mesenteric LN	IV	high	6x R-EPOCH	No	18 mo NED
64	F	69	bone marrow	IV	high-inter	6x R-EPOCH	No	21 mo NED
65	F	76	retroperitoneal mass	NA	NA	NA	NA	NA
68	F	65	cervical LN	I	low	6x R-CHOP	No	12 mo NED
70§	M	75	stomach**	IE	-	FOLFIRI, Herceptin and 5-FU; gastrectomy	No	42 mo NED

71§	F	78	tonsil	II	low	4x R-CHOP	No	97 mo NED
72	M	61	tonsil/ Waldeyer ring	IV	NA	6x R-CHOP+ 2x R	No	9 mo NED
73	F	87	tonsil	IV	NA	No treatment	-	1 mo DOD
74§	F	85	inguinal LN	III	high	2x R-Benda	NA	6 mo DOD

M: male; F: female; IPI: International prognostic index; NA: not available; mo:months; LN: lymph node; LFU: lost to follow-up;

R/R: relapse/refractory; NED: no evidence of disease; DOD: died of disease; DOC: died of other cause; R: Rituximab;

R-CLIP: Rituximab-Cyclophosphamide, liposomal Vincristine, Prednisone; RTX: radiotherapy; R-CHOP: Rituximab-Cyclophosphamide, Doxorubicin, Vincristine, Prednisone; MTX: Methotrexate; BURKIMAB: Rituximab, Cyclophosphamide, Etoposide, Dexamethasone, Methotrexate, Iphosphamide, Vincristine, Cytarabine; R-EPOCH: Rituximab, Etoposide, Prednisone, Vincristine, Cyclophosphamide, Doxorubicin; SCT: stem cell transplantation; FOLFIRI: 5-Fluorouracil, Leucovorin and Irinotecan; 5-FU: 5-Fluorouracil.

§ Cases with *IRF4* translocation/mutation

* lost to follow-up after SCT.

** Concomitant diagnosis of gastric adenocarcinoma.

Supplemental Table 4. FISH results and COO in 55 cases diffuse large B-cell lymphoma with aberrant co-expression of CD10, BCL6 and MUM1

Case	*MYC* FISH	*BCL2* FISH	*BCL6* FISH	*IRF4* FISH	IGH FISH	light chain FISH	Nanostring COO	HTG COO	COO final	FISH Group
1	N	N	G	N	G		GCB	GCB	GCB	1
2	N	N	N	N	N	IGK R	ABC	ABC	ABC	2
4	N	R	N	N	R		unclassifiable	GCB	GCB	3
5	N	N	N	R	N	IGL R	GCB	GCB	GCB	2
6	N	N	N	N	N		ABC	ABC	ABC	1
7	N	N	N	N	N		NA	GCB	GCB	1
8	N	R	R	N	R		NA	GCB	GCB	3
9	N	N	G	N	N		ABC	ABC	ABC	1
10	N	N	N	R	R		NA	GCB	GCB	2
11	N	N	N	R	R		NA	NA	NA	2
12	N	N	R	N	R		NA	ABC	ABC	3
13	R	N	N	N	R		GCB	GCB	GCB	3
14	N	N	N	N	N		unclassifiable	ABC	ABC	1
15	N	N	N	N	N		GCB	GCB	GCB	1
16	N	N	N	R	N		ABC	ABC	ABC	2
17	N	N	N	N	R		ABC	unclassifiable	ABC	3
20	N	N	N	N	R		GCB	GCB	GCB	3
21	N	N	G	N	N		unclassifiable	ABC	ABC	1
22	N	N	N	N	N		unclassifiable	GCB	GCB	1
23	R	N	N	N	N		NA	GCB	GCB	3
25	N	R	N	R	R		unclassifiable	NA	unclassifiable	3
26	N	R	R	R	R		GCB	NA	GCB	3
27	R	N	N	N	R		GCB	NA	GCB	3
31	N	N	G	R	R		GCB	NA	GCB	2
32	N	N	N	N	N		unclassifiable	NA	unclassifiable	NI
33	R	N	N	N	N		GCB	NA	GCB	3
34	N	R	N	N	R		ABC	NA	ABC	3
35	R	N	N	N	NA		GCB	NA	GCB	3

38	N	N	N	N	N	IGL R	ABC	NA	ABC	2
39	N	N	R	N	NA		ABC	NA	ABC	3
40	N	G	N	N	N		GCB	NA	GCB	1
41	G	N	R	N	N		GCB	NA	GCB	3
44	N	N	N	R	N		GCB	NA	GCB	2
45	R	N	N	N	R		GCB	NA	GCB	3
46	N	N	N	N	N		GCB	NA	GCB	NI
47	N	G	G	N	R		GCB	NA	GCB	3
48	R	N	R	N	N		GCB	NA	GCB	3
49	G	G	G	N	N		ABC	NA	ABC	1
50	R	R	R	G	R		GCB	NA	GCB	3
51	N	N	G	N	N		GCB	NA	GCB	1
52	N	R	R	N	R		unclassifiable	NA	unclassifiable	3
54	G	R	G	G	R		GCB	NA	GCB	NI
57	G	G	G	N	N		GCB	NA	GCB	1
58	N	R	N	N	R		GCB	NA	GCB	NI
60	R	N	N	G	R		GCB	NA	GCB	3
61	N	R	N	N	R		GCB	NA	GCB	NI
62	R	R	R	N	R		unclassifiable	NA	unclassifiable	3
64	R	N	R	N	N		unclassifiable	NA	unclassifiable	3
65	N	R	R	N	R		GCB	NA	GCB	3
68	N	NA	R	N	R		unclassifiable	NA	unclassifiable	3
70	N	N	N	R	N	IGL R	NA	ABC	ABC	2
71	N	N	N	R	R		GCB	GCB	GCB	2
72	N	N	G	N	N		unclassifiable	ABC	ABC	1
73	N	N	N	N	R		ABC	ABC	ABC	3
74	N	N	N	R	R		ABC	ABC	ABC	2

FISH: fluorescence *in situ* hybridization, N: normal, G: gains, R: rearranged, IGH: Immunoglobulin heavy chain, IGK: light chain kappa
IGL: Immunoglobulin light chain Lambda, NI: not included because of lack of mutational analysis; COO: cell of origin

Supplemental Table 5. List of mutations detected in 50 cases of diffuse large B-cell lymphoma with aberrant co-expression of CD10, BCL6 and MUM1

Case	Gene	Chr	Start	VAF	Function	cDNA	AA pos	Verified ampliseq	Filtre	COSMICv84_ID	SIFT_pred	MutAssess_pred
1	*FBXW7*	4	153250883	50.7	stopgain	c.C1177T	p.R393X		Driver	COSM1052102	.	.
1	*PIM1*	6	37138987	35	nonsynonymous SNV	c.G600C	p.W200C		Passenger	.	Deleterious	Low
1	*KMT2D*	12	49434153	34.4	nonsynonymous SNV	c.A7400C	p.H2467P		Passenger	.	Tolerated	Low
2	*PIK3CD*	1	9784041	57.8	nonsynonymous SNV	c.G2609A	p.R870Q		Passenger	.	Tolerated	Low
2	*BTG2*	1	203274858	37,4	nonsynonymous SNV	c.C124T	p.L42F		Driver	COSM5714747	Deleterious	Medium
2	*MYD88*	3	38182641	39.4	nonsynonymous SNV	c.T794C	p.L265P	Verified	Driver	COSM85940	Deleterious	.
2	*IRF4*	6	393330	7.6	stopgain	c.C178T	p.Q60X	Verified	Driver	.	.	.
2	*HIST1H1E*	6	26156965	36.9	nonsynonymous SNV	c.C347T	p.A116V		Passenger	.	Tolerated	Low
2	*PIM1*	6	37138355	40	nonsynonymous SNV	c.C277T	p.L93F	Verified	Driver	COSM220745	Deleterious	Neutral
2	*PIM1*	6	37138603	23.8	nonsynonymous SNV	c.G410A	p.S137N		Passenger	.	Tolerated	Neutral
2	*PIM1*	6	37139045	34.6	nonsynonymous SNV	c.C658T	p.L220F		Driver	.	Deleterious	Medium
2	*PIM1*	6	37139063	34	nonsynonymous SNV	c.G676C	p.E226Q		Passenger	.	Deleterious	Neutral
2	*KMT2D*	12	49437149	33.1	frameshift deletion	c.5529_5530del	p.T1843fs		Driver	.	.	.
2	*CD79B*	17	62006798	34.3	nonsynonymous SNV	c.A590G	p.Y197C	Verified	Driver	COSM220736	Deleterious	Neutral
4	*BTG2*	1	203274742	17.1	nonsynonymous SNV	c.A8G	p.H3R		Passenger	.	Tolerated	Neutral
4	*BTG2*	1	203274787	19	nonsynonymous SNV	c.G53A	p.G18D		Passenger	.	Tolerated	Low
4	*SETD2*	3	47164351	45.4	nonsynonymous SNV	c.C1775A	p.T592K		Driver	COSM6340776	Deleterious	Low
4	*HIST1H1E*	6	26156846	35	nonsynonymous SNV	c.C228G	p.N76K		Driver	COSM3927974	Deleterious	Medium
4	*PIM1*	6	37138355	19.3	nonsynonymous SNV	c.C277T	p.L93F	Verified	Driver	COSM220745	Deleterious	Neutral

4	*ETS1*	11	128442971	36.1	nonsynonymous SNV	c.C55G	p.R19G		Driver	.	Deleterious	.
4	*KMT2D*	12	49427027	57.9	stopgain	c.C11461T	p.Q3821X		Driver	.	.	.
4	*STAT6*	12	57496658	51.5	nonsynonymous SNV	c.A1259G	p.N420S		Driver	COSM4170475	Tolerated	Low
4	*STAT3*	17	40475325	51.9	nonsynonymous SNV	c.T1701A	p.N567K		Driver	COSM220687	Tolerated	Neutral
4	*BCL2*	18	60985721	37.9	nonsynonymous SNV	c.C179T	p.A60V	Verified	Driver	COSM220803	Tolerated	Low
4	*BCL2*	18	60985725	38.6	nonsynonymous SNV	c.C175T	p.P59S	Verified	Driver	COSM220823	Tolerated	Neutral
4	*BCL2*	18	60985833	26.8	nonsynonymous SNV	c.C67G	p.L23V	Not Verified	Driver	.	Deleterious	Medium
4	*BCL2*	18	60985866	21	nonsynonymous SNV	c.C34T	p.R12W	Verified	Driver	COSM4170953	Deleterious	Medium
4	*BCL2*	18	60985878	18.2	nonsynonymous SNV	c.G22A	p.G8R	Verified	Driver	.	Deleterious	Medium
5	*IRF4*	6	393156	16.1	nonsynonymous SNV	c.A4G	p.N2D	Verified	Passenger	.	Deleterious	Low
5	*IRF4*	6	393217	13.6	nonsynonymous SNV	c.G65T	p.G22V	Verified	Passenger	.	Tolerated	Neutral
5	*IRF4*	6	393222	13.4	nonsynonymous SNV	c.C70T	p.L24F	Verified	Driver	COSM4171587	Deleterious	Medium
5	*IRF4*	6	393225	15.3	nonsynonymous SNV	c.C73A	p.R25S	Verified	Driver	.	Deleterious	Medium
5	*IRF4*	6	393341	15.9	nonframeshift deletion	c.189_191del	p.63_64del	Not Verified	Driver	.	.	.
5	*IRF4*	6	393349	14.3	nonsynonymous SNV	c.A197C	p.E66A	Not Verified	Passenger	.	Tolerated	Low
5	*CARD11*	7	2983886	13	nonsynonymous SNV	c.A644C	p.K215T	Verified	Driver	COSM1089012	Deleterious	Medium
5	*KMT2D*	12	49427545	47.6	nonsynonymous SNV	c.C10943T	p.P3648L		Driver	COSM1361992	Deleterious	Neutral
6	*PIK3CD*	1	9776110	32.7	nonframeshift deletion	c.574_579del	p.192_193del		Driver	.	.	.
6	*BTG2*	1	203274836	25.5	nonsynonymous SNV	c.G102T	p.R34S		Passenger	.	Tolerated	Neutral
6	*MYD88*	3	38182641	32.7	nonsynonymous SNV	c.T794C	p.L265P	Verified	Driver	COSM85940	Deleterious	.
6	*TBL1XR1*	3	176750835	35.3	nonsynonymous SNV	c.G1340A	p.S447N		Driver	COSM3205524	Deleterious	Medium
6	*PIM1*	6	37138916	28.7	nonsynonymous SNV	c.G529C	p.V177L	Verified	Passenger	.	Tolerated	Low

6	*PIM1*	6	37139153	21.8	nonsynonymous SNV	c.C766T	p.H256Y	Verified	Driver	.	Deleterious	Medium
6	*PRDM1*	6	106536324	51	nonsynonymous SNV	c.G291C	p.E97D	Verified	Driver	COSM97137	Tolerated	Low
6	*KMT2D*	12	49420607	32.3	nonsynonymous SNV	c.C15142T	p.R5048C		Driver	COSM1742335	Deleterious	High
6	*TP53*	17	7577106	33.5	nonsynonymous SNV	c.C832T	p.P278S		Driver	COSM10939	Deleterious	Medium
7	*BTG2*	1	203274817	38.8	nonsynonymous SNV	c.G83A	p.G28D		Driver	COSM5946364	Tolerated	Medium
7	*BTG2*	1	203274831	38.9	nonsynonymous SNV	c.C97G	p.Q33E		Passenger	.	Tolerated	Neutral
7	*BTG2*	1	203274858	39.6	nonsynonymous SNV	c.C124G	p.L42V		Driver	COSM5714925	Deleterious	Medium
7	*MYD88*	3	38182641	41.8	nonsynonymous SNV	c.T794C	p.L265P	Verified	Driver	COSM85940	Deleterious	.
7	*KLHL6*	3	183273174	37.4	nonsynonymous SNV	c.C268G	p.L90V		Driver	COSM4171225	Deleterious	High
7	*HIST1H1E*	6	26156827	38.8	nonsynonymous SNV	c.G209A	p.G70D		Driver	.	Deleterious	Medium
7	*PIM1*	6	37138423	60.6	nonsynonymous SNV	c.G345C	p.K115N	Verified	Driver	COSM220742	Tolerated	Neutral
7	*KMT2D*	12	49434709	51.4	nonsynonymous SNV	c.C6844T	p.R2282W		Passenger	.	Deleterious	Neutral
7	*BTG1*	12	92539173	26.9	nonsynonymous SNV	c.C139G	p.L47V		Passenger	.	Tolerated	Low
7	*CREBBP*	16	3786773	33.4	nonframeshift deletion	c.4436_4438del	p.1479_1480del		Driver	.	.	.
7	*CD79B*	17	62006798	44.2	nonsynonymous SNV	c.A590G	p.Y197C	Verified	Driver	COSM220736	Deleterious	Neutral
8	*ARID1A*	1	27023461	37.3	frameshift insertion	c.568dupG	p.G189fs		Driver	.	.	.
8	*TNIP1*	5	150415225	10.2	nonframeshift deletion	c.1425_1439del	p.475_480del		Driver	.	.	.
8	*PIM1*	6	37139018	15.8	nonsynonymous SNV	c.C631G	p.L211V	Verified	Driver	COSM1581467	Deleterious	Low
8	*SGK1*	6	134492857	54.1	nonsynonymous SNV	c.A1085G	p.E362G		Driver	.	Deleterious	High
8	*TNFAIP3*	6	138202351	56.5	frameshift deletion	c.2268delC	p.D756fs	Verified	Driver	.	.	.
8	*MYC*	8	128750802	18.4	nonsynonymous SNV	c.G339C	p.Q113H		Driver	COSM1159800	Deleterious	Medium

8	*CREBBP*	16	3777833	34.3	nonsynonymous SNV	c.G7215C	p.Q2405H		Passenger	.	Deleterious	Low
8	*CREBBP*	16	3786760	29.9	nonsynonymous SNV	c.T4451C	p.F1484S		Driver	COSM4170754	Deleterious	High
8	*STAT3*	17	40475325	32.9	nonsynonymous SNV	c.T1701A	p.N567K		Driver	COSM220687	Tolerated	Neutral
8	*BCL2*	18	60985878	24.9	nonsynonymous SNV	c.G22C	p.G8R	Verified	Driver	.	Deleterious	Medium
9	*HIST1H1E*	6	26157150	76.5	nonsynonymous SNV	c.G532A	p.A178T		Driver	COSM3860915	Tolerated	Low
9	*CCND3*	6	41903707	52.9	nonsynonymous SNV	c.C850T	p.P284S		Driver	COSM144647	Deleterious	Medium
9	*ACTB*	7	5569017	14	nonframeshift deletion	c.127_138del	p.43_46del		Driver	.	.	.
9	*SOCS1*	16	11349032	37.8	nonsynonymous SNV	c.C304G	p.L102V		Driver	.	Deleterious	Medium
9	*SOCS1*	16	11349260	34.8	frameshift deletion	c.76delT	p.S26fs		Driver	.	.	.
10	*IRF4*	6	393172	31	nonsynonymous SNV	c.G20T	p.G7V	Only Ampliseq	Passenger	.	Tolerated	Neutral
10	*IRF4*	6	393201	11	nonsynonymous SNV	c.G49C	p.V17L	Only Ampliseq	Passenger	.	Tolerated	Neutral
10	*IRF4*	6	393206	11	nonsynonymous SNV	c.C54A	p.S18R	Only Ampliseq	Passenger	.	Deleterious	Low
10	*IRF4*	6	393262	21	nonsynonymous SNV	c.A110T	p.Y37F	Only Ampliseq	Passenger	.	Tolerated	Low
10	*IRF4*	6	393283	21	nonsynonymous SNV	c.A131G	p.N44S	Only Ampliseq	Passenger	.	Deleterious	Low
10	*IRF4*	6	393295	16	nonsynonymous SNV	c.G143C	p.S48T	Only Ampliseq	Passenger	.	Tolerated	Neutral
10	*IRF4*	6	393298	23	nonsynonymous SNV	c.T146C	p.I49T	Only Ampliseq	Passenger	.	Deleterious	Low
10	*IRF4*	6	393330	23	nonsynonymous deletion	c. del178_180	p.Q60F	Only Ampliseq	Driver	.	.	.
11	*ARID1A*	1	27106307	3.66	stopgain	c.G5918A	p.W1973X		Driver	COSM4808707	.	.
11	*BCL10*	1	85736511	3.02	frameshift deletion	c.136delA	p.I46fs		Driver	COSM391505	.	.
11	*SETD2*	3	47162668	6.35	nonsynonymous SNV	c.T3458C	p.I1153T		Passenger	.	Deleterious	Neutral
11	*TET2*	4	106156975	3.2	stopgain	c.C1876T	p.Q626X		Driver	COSM211684	.	.

11	*IRF4*	6	393225	2.19	frameshift deletion	c.73_95del	p.R25fs	Verified	Driver	.	.	.
11	*HIST1H1E*	6	26156985	5.52	nonsynonymous SNV	c.G367T	p.A123S		Driver	.	Tolerated	Medium
11	*HIST1H1E*	6	26157012	3.42	nonsynonymous SNV	c.G394A	p.A132T		Driver	.	Tolerated	Medium
11	*HIST1H1E*	6	26157099	2.58	nonsynonymous SNV	c.C481G	p.P161A		Driver	COSM2857867	Tolerated	Medium
11	*HIST1H1E*	6	26157144	2.6	nonsynonymous SNV	c.G526C	p.A176P		Passenger	.	Tolerated	Low
11	*HIST1H1E*	6	26157150	76.14	nonsynonymous SNV	c.G532A	p.A178T		Driver	COSM3860915	Tolerated	Low
11	*HIST1H1E*	6	26157204	3.53	nonsynonymous SNV	c.C586A	p.P196T		Driver	COSM1292262	Deleterious	Medium
11	*PIM1*	6	37139021	3.43	nonsynonymous SNV	c.G634C	p.E212Q	Verified	Driver	.	Deleterious	Medium
11	*CCND3*	6	41903707	45.09	nonsynonymous SNV	c.C850T	p.P284S		Driver	COSM144647	Deleterious	Medium
11	*SGK1*	6	134495170	5.24	nonsynonymous SNV	c.G486C	p.E162D		Passenger	.	Tolerated	Low
11	*ACTB*	7	5569017	15.35	nonframeshift deletion	c.127_138del	p.43_46del		Driver	.	.	.
11	*ACTB*	7	5569230	10.09	nonsynonymous SNV	c.G59C	p.G20A		Driver	COSM3358151	.	High
11	*MYC*	8	128750527	3.2	nonsynonymous SNV	c.T64C	p.F22L		Driver	COSM3358205	Tolerated	Neutral
11	*KMT2D*	12	49439906	37.72	frameshift deletion	c.4619_4635del	p.E1540fs		Driver	.	.	.
11	*KMT2D*	12	49443634	2.16	nonsynonymous SNV	c.C3737T	p.T1246M		Driver	COSM940079	Deleterious	Neutral
11	*CREBBP*	16	3779138	17.59	frameshift insertion	c.5909_5910insT	p.Q1970fs		Driver	.	.	.
11	*SOCS1*	16	11348769	2.65	nonsynonymous SNV	c.G567C	p.E189D		Passenger	.	Tolerated	Low
11	*SOCS1*	16	11348920	2.77	nonsynonymous SNV	c.G416A	p.G139D		Passenger	.	Deleterious	Low
11	*SOCS1*	16	11348951	2.49	nonsynonymous SNV	c.C385T	p.H129Y		Passenger	.	Tolerated	Neutral
11	*SOCS1*	16	11348962	4.51	nonsynonymous SNV	c.G374C	p.S125T		Driver	COSM5947826	Deleterious	Medium
11	*SOCS1*	16	11348968	2.3	nonsynonymous SNV	c.C368A	p.P123H		Driver	.	Deleterious	Medium

11	*SOCS1*	16	11349032	42.81	nonsynonymous SNV	c.C304G	p.L102V		Driver	.	Deleterious	Medium
11	*SOCS1*	16	11349260	31.95	frameshift deletion	c.76delT	p.S26fs		Driver	.	.	.
12	*PIM1*	6	37139090	10.55	nonsynonymous SNV	c.G703A	p.A235T	Only Ampliseq	Passenger	.	Tolerated	Low
12	*PIM1*	6	37139111	31.95	nonsynonymous SNV	c.G724A	p.V242M	Only Ampliseq	Driver	COSM4610025	Deleterious	Low
12	*PIM1*	6	37139204	30.43	nonsynonymous SNV	c.C817G	p.L273V	Only Ampliseq	Passenger	.	Tolerated	Neutral
13	*MYD88*	3	38182641	38.8	nonsynonymous SNV	c.T794C	p.L265P	Validated	Driver	COSM85940	Deleterious	.
13	*TBL1XR1*	3	176752054	69.4	nonsynonymous SNV	c.T1182G	p.I394M		Driver	.	Deleterious	Medium
13	*HIST1H1E*	6	26157108	66.5	nonsynonymous SNV	c.G490A	p.A164T		Driver	.	Tolerated	Medium
13	*HIST1H1D*	6	26234590	64.8	nonsynonymous SNV	c.C572G	p.A191G		Driver	.	Tolerated	Medium
13	*CCND3*	6	41903745	35.4	frameshift insertion	c.811dupC	p.R271fs		Driver	COSM144854	.	.
13	*ACTB*	7	5568876	33.1	nonsynonymous SNV	c.G279C	p.E93D		Driver	.	.	Medium
13	*ETS1*	11	128391824	26.4	nonsynonymous SNV	c.G66C	p.E22D		Driver	COSM220622	Tolerated	Neutral
13	*KMT2D*	12	49421674	48.3	frameshift insertion	c.14554dupA	p.T4852fs		Driver	.	.	.
14	*PIM1*	6	37139063	98	nonsynonymous SNV	c.G676C	p.E226Q	Only Ampliseq	Passenger	.	Deleterious	Neutral
14	*PIM1*	6	37138804	86	nonsynonymous SNV	c.G510C	p.E170D	Only Ampliseq	Driver	COSM220741	Tolerated	Neutral
14	*PIM1*	6	37139072	82	nonsynonymous SNV	c.G685C	p.A229P	Only Ampliseq	Driver	COSM4171580	Tolerated	Neutral
14	*PIM1*	6	37139081	82	nonsynonymous SNV	c.G694A	p.E232K	Only Ampliseq	Driver	.	Deleterious	Medium
14	*PIM1*	6	37139210	79	nonsynonymous SNV	c.C823G	p.L275V	Only Ampliseq	Passenger	.	Deleterious	Low
14	*MYD88*	3	38182641	53	nonsynonymous SNV	c.T794C	p.L265P	Only Ampliseq	Driver	COSM85940	Deleterious	.
14	*PIM1*	6	37139004	49	nonsynonymous SNV	c. G617C	p.S206T	Only Ampliseq	Passenger	.	Deleterious	Low
14	*PIM1*	6	37138901	45	nonsynonymous SNV	c. C514T	p.P172S	Only Ampliseq	Driver	COSM5655253	Tolerated	Low

14	*PIM1*	6	37138379	44	nonsynonymous SNV	c. G301A	p.A101T	Only Ampliseq	Driver	COSM4171567	Deleterious	Neutral
14	*PIM1*	6	37139268	29	splicesite deletion	c. G880+1T	p.?	Only Ampliseq	Driver	COSM1191990	.	.
15	*BTG2*	1	203274863	22.6	nonsynonymous SNV	c.G129C	p.Q43H		Driver	.	Tolerated	Medium
15	*BTG2*	1	203276235	19.4	nonsynonymous SNV	c.A146G	p.H49R		Passenger	.	Tolerated	Low
15	*MYD88*	3	38182641	41.2	nonsynonymous SNV	c.T794C	p.L265P	Verified	Driver	COSM85940	Deleterious	.
15	*TBL1XR1*	3	176750836	26.8	nonsynonymous SNV	c.A1339C	p.S447R		Driver	COSM5708570	Deleterious	Low
15	*HIST1H1E*	6	26156942	43.3	nonsynonymous SNV	c.C324G	p.N108K		Passenger	.	Tolerated	Low
15	*HIST1H1E*	6	26157054	39.8	nonsynonymous SNV	c.A436G	p.T146A		Passenger	.	Tolerated	Neutral
15	*HIST1H1E*	6	26157090	38.4	nonsynonymous SNV	c.G472A	p.A158T		Driver	COSM1076710	Deleterious	Medium
15	*PIM1*	6	37138396	17.4	nonframeshift deletion	c.318_326del	p.106_109del	Not Verified	Driver	.	.	.
15	*PIM1*	6	37138419	24.7	nonsynonymous SNV	c.C341G	p.T114S	Verified	Driver	COSM4171568	Tolerated	Neutral
15	*PIM1*	6	37138563	24.9	nonsynonymous SNV	c.C370G	p.P124A	Not Verified	Passenger	.	Tolerated	Neutral
15	*PIM1*	6	37138630	22.5	nonsynonymous SNV	c.G437T	p.G146V	Not Verified	Passenger	.	Deleterious	Low
15	*PIM1*	6	37138642	26.8	nonsynonymous SNV	c.C449T	p.S150F	Verified	Passenger	.	Deleterious	Low
15	*PIM1*	6	37138775	6.1	nonsynonymous SNV	c.G481C	p.E161Q	Not Verified	Passenger	.	Tolerated	Neutral
15	*PIM1*	6	37138800	28.4	nonsynonymous SNV	c.G506A	p.G169E	Verified	Driver	COSM6210491	Tolerated	Neutral
15	*PIM1*	6	37138908	24.7	nonsynonymous SNV	c.G521A	p.G174D	Verified	Driver	COSM1581465	Tolerated	Low
15	*PIM1*	6	37138911	20.9	nonsynonymous SNV	c.C524G	p.T175S	Verified	Passenger	.	Tolerated	Neutral
15	*PIM1*	6	37138950	23.3	nonsynonymous SNV	c.G563C	p.S188T		Passenger	.	Tolerated	Low
15	*PIM1*	6	37139063	23.4	stopgain	c.G676T	p.E226X	Verified	Driver	.	.	.
15	*PIM1*	6	37139098	24.3	nonsynonymous SNV	c.C711G	p.S237R	Verified	Driver	COSM220743	Tolerated	Neutral
15	*ETS1*	11	128391836	22.9	frameshift deletion	c.54delA	p.K18fs		Driver	COSM5018866	.	.

15	*BTG1*	12	92539173	20.3	nonsynonymous SNV	c.C139G	p.L47V		Passenger	.	Tolerated	Low
15	*BTG1*	12	92539295	19.6	nonsynonymous SNV	c.C17T	p.T6I		Passenger	.	Tolerated	Neutral
15	*BTG1*	12	92539304	19.2	nonsynonymous SNV	c.C8G	p.P3R		Passenger	.	Tolerated	Low
15	*FOXO1*	13	41240264	21.5	nonsynonymous SNV	c.G86A	p.R29K		Driver	.	Deleterious	Medium
15	*CIITA*	16	11001126	51.3	frameshift deletion	c.1777_1778del	p.R593fs		Driver	.	.	.
15	*PRKCB*	16	23847561	47.6	nonsynonymous SNV	c.G65A	p.R22H		Driver	.	Deleterious	Medium
15	*CD79B*	17	62006798	26.9	nonsynonymous SNV	c.A590C	p.Y197S	Verified	Driver	COSM220733	Deleterious	Neutral
15	*EP300*	22	41565532	24.2	nonsynonymous SNV	c.A4198C	p.S1400R		Driver	COSM6654392	Deleterious	High
16	*ARID1A*	1	27094401	49.1	nonsynonymous SNV	c.G3109C	p.G1037R		Passenger	.	Tolerated	Neutral
16	*BTG2*	1	203276365	43.1	frameshift deletion	c.276_280del	p.L92fs		Driver	.	.	.
16	*BTG2*	1	203276370	43.4	nonsynonymous SNV	c.A281T	p.Q94L		Passenger	.	Tolerated	Neutral
16	*MYD88*	3	38182641	70.2	nonsynonymous SNV	c.T794C	p.L265P	Verified	Driver	COSM85940	Deleterious	.
16	*SETD2*	3	47125398	12.6	nonsynonymous SNV	c.G5872A	p.A1958T		Passenger	.	Tolerated	Neutral
16	*IRF4*	6	393360	32.5	nonsynonymous SNV	c.C208G	p.L70V	Verified	Driver	COSM4610567	Deleterious	Low
16	*PIM1*	6	37138563	27.5	nonsynonymous SNV	c.C370T	p.P124S	Verified	Driver	COSM3076476	Tolerated	Neutral
16	*PIM1*	6	37138615	28.2	nonsynonymous SNV	c.G422A	p.G141D	Verified	Driver	COSM6204719	Deleterious	High
16	*PIM1*	6	37138908	32.9	nonsynonymous SNV	c.G521A	p.G174D	Verified	Driver	COSM1581465	Tolerated	Low
16	*PIM1*	6	37138919	33.8	nonsynonymous SNV	c.C532T	p.P178S	Verified	Passenger	.	Deleterious	Low
16	*PIM1*	6	37138955	25.5	nonsynonymous SNV	c.G568A	p.G190S		Passenger	.	Deleterious	Neutral
16	*PIM1*	6	37138957	25.7	frameshift deletion	c.570_571del	p.G190fs		Driver	.	.	.
16	*PIM1*	6	37139108	31.4	stopgain	c.C721T	p.Q241X	Not Verified	Driver	.	.	.
16	*PIM1*	6	37139189	32.4	nonsynonymous SNV	c.C802G	p.L268V	Verified	Passenger	.	Deleterious	Low

16	*PIM1*	6	37139204	30.3	nonsynonymous SNV	c.C817G	p.L273V	Verified	Passenger	.	Tolerated	Neutral
16	*ATM*	11	108159816	35.9	nonsynonymous SNV	c.C4222T	p.L1408F		Driver	.	Deleterious	Medium
16	*ATM*	11	108196068	49	nonsynonymous SNV	c.T6604G	p.Y2202D		Driver	.	Deleterious	Medium
16	*ETV6*	12	11803094	66.6	frameshift deletion	c.33delG	p.K11fs		Driver	.	.	.
16	*KMT2D*	12	49444250	67.4	stopgain	c.C3121T	p.Q1041X		Driver	.	.	.
16	*BTG1*	12	92538170	33.5	nonsynonymous SNV	c.C202T	p.R68C		Driver	.	Deleterious	Medium
16	*CD79B*	17	62006799	36.1	nonsynonymous SNV	c.T589G	p.Y197D	Verified	Driver	COSM1737939	Deleterious	Neutral
16	*GNA13*	17	63052513	34.7	stopgain	c.C199T	p.Q67X		Driver	COSM2796556	.	.
17	*CD58*	1	117078795	37.1	frameshift insertion	c.419_420insGT	p.V140fs		Driver	.	.	.
17	*BTG2*	1	203274870	26.8	nonsynonymous SNV	c.C136G	p.L46V		Driver	.	Deleterious	Medium
17	*KLHL6*	3	183217586	33.8	nonsynonymous SNV	c.G939T	p.M313I		Driver	COSM5985192	Tolerated	Neutral
17	*HIST1H1E*	6	26156862	28.7	nonsynonymous SNV	c.C244A	p.L82M		Passenger	.	Deleterious	Low
17	*PIM1*	6	37138377	25.2	nonsynonymous SNV	c.T299C	p.L100P	Verified	Passenger	.	Deleterious	Neutral
17	*NFKBIE*	6	44232739	34.9	frameshift deletion	c.759_762del	p.T253fs		Driver	COSM5416027	.	.
17	*KMT2D*	12	49432227	20.4	nonsynonymous SNV	c.C8912T	p.T2971I		Passenger	.	Deleterious	Neutral
17	*FOXO1*	13	41239941	27.4	nonsynonymous SNV	c.G409A	p.V137M		Passenger	.	Tolerated	Low
17	*CREBBP*	16	3779598	27.8	nonsynonymous SNV	c.C5450T	p.P1817L		Driver	COSM5561772	Deleterious	Low
17	*CREBBP*	16	3808901	31.1	nonsynonymous SNV	c.C3323T	p.S1108L		Driver	COSM2919997	Deleterious	Medium
17	*CD79B*	17	62008703	26.7	nonsynonymous SNV	c.A113G	p.N38S		Passenger	.	Tolerated	Low
17	*CD79B*	17	62008710	26.6	nonsynonymous SNV	c.T106A	p.Y36N		Passenger	.	Tolerated	Low
17	*XBP1*	22	29196309	37.5	nonsynonymous SNV	c.C204A	p.S68R		Driver	.	Deleterious	Medium
20	*FBXW7*	4	153250883	3.8	stopgain	c.C1177T	p.R393X		Driver	COSM22973	.	.

20	*NOTCH1*	9	139399245	5.4	nonsynonymous SNV	c.G4898A	p.R1633H		Passenger	.	Deleterious	Low
20	*POU2F2*	19	42599703	28.5	frameshift deletion	c.948delT	p.F316fs		Driver	.	.	.
21	*MYD88*	3	38182641	67.7	nonsynonymous SNV	c.T794C	p.L265P	Verified	Driver	COSM85940	Deleterious	.
21	*TBL1XR1*	3	176756175	66.6	nonframeshift deletion	c.971_973del	p.324_325del		Driver	COSM3205534	.	.
21	*HIST1H1E*	6	26156766	60.5	nonsynonymous SNV	c.G148A	p.A50T		Driver	.	Tolerated	Medium
21	*PIM1*	6	37139039	4.6	stopgain	c.C652T	p.Q218X		Driver	COSM327134	.	.
21	*TP53*	17	7577094	37	nonsynonymous SNV	c.C844T	p.R282W		Driver	COSM10704	Deleterious	Medium
22	*PIK3CD*	1	9784870	48.9	nonsynonymous SNV	c.G2873A	p.G958D		Passenger	.	Tolerated	Neutral
22	*CD58*	1	117113592	26	nonsynonymous SNV	c.G3A	p.M1I		Driver	COSM5704871	Deleterious	.
22	*TMEM30A*	6	75969072	32.1	stopgain	c.C676T	p.R226X		Driver	COSM597553	.	.
22	*KMT2D*	12	49426798	33.1	stopgain	c.T11690G	p.L3897X		Driver	COSM5670280	.	.
22	*PRKCB*	16	24196803	30.3	nonsynonymous SNV	c.A1637T	p.E546V		Driver	COSM5706084	Deleterious	Neutral
23	*ARID1A*	1	27094308	29.1	stopgain	c.G3016T	p.E1006X		Driver	COSM464363	.	.
23	*CARD11*	7	2977549	26.2	nonsynonymous SNV	c.C1135T	p.R379W	Verified	Driver	.	Deleterious	Medium
23	*CARD11*	7	2984163	10.4	nonsynonymous SNV	c.G367A	p.G123S	Verified	Driver	COSM41655	Tolerated	Medium
23	*B2M*	15	45007804	51.2	frameshift insertion	c.252dupC	p.L84fs		Driver	.	.	.
25	*TNFRSF14*	1	2489231	46.55	nonsynonymous SNV	c.G136A	p.E46K		Driver	COSM6213102	Deleterious	Medium
25	*TNFRSF14*	1	2491318	24.87	nonsynonymous SNV	c.T361C	p.C121R		Driver	.	Deleterious	High
25	*CREBBP*	16	3786767	29.93	nonsynonymous SNV	c.T4444A	p.Y1482N		Driver	COSM220499	Deleterious	High
25	*POU2F2*	19	42600030	32.79	nonsynonymous SNV	c.A715G	p.T239A		Driver	COSM1316489	Deleterious	Medium
25	*KMT2D*	12	49427265	19.55	nonframeshift insertion	c.11222_11223insGCA	p.Q3741delinsQQ		Driver	COSM4385667	.	.
25	*KMT2D*	12	49427690	35.89	stopgain	c.C10798T	p.Q3600X		Driver	.	.	.

25	*BCL2*	18	60985743	51.09	nonsynonymous SNV	c.C157T	p.P53S	Driver	COSM220914	Tolerated	Neutral
25	*GNA13*	17	63010719	37.12	nonsynonymous SNV	c.C790T	p.R264C	Driver	.	Deleterious	High
25	*GNA13*	17	63049797	28.32	frameshift insertion	c.332dupG	p.G111fs	Driver	.	.	.
25	*MAP2K1*	15	66774131	35.66	nonsynonymous SNV	c.G607A	p.E203K	Driver	COSM232755	Deleterious	Low
25	*EZH2*	7	148508728	32.64	nonsynonymous SNV	c.T1936C	p.Y646H	Driver	COSM220732	Deleterious	High
25	*TBL1XR1*	3	176755957	38.38	nonsynonymous SNV	c.G1051A	p.E351K	Passenger	.	Deleterious	Neutral
26	*TBL1XR1*	3	176769376	46.7	nonsynonymous SNV	c.G343A	p.A115T	Passenger	.	Tolerated	Neutral
26	*IRF4*	6	393296	44.0	nonsynonymous SNV	c.C144G	p.S48R	Passenger	.	Deleterious	Neutral
26	*EZH2*	7	148508727	48.0	nonsynonymous SNV	c.A1937G	p.Y646C	Driver	COSM3259630	Deleterious	High
26	*CREBBP*	16	3781324	35.9	nonframeshift deletion	c.5039_5041del	p.1680_1681del	Driver	COSM291735	.	.
26	*CREBBP*	16	3807376	47.6	nonsynonymous SNV	c.A3611T	p.Y1204F	Driver	COSM4579032	Tolerated	Low
26	*SMARCA4*	19	11144146	41.6	nonsynonymous SNV	c.C3727T	p.R1243W	Driver	COSM1136101	Deleterious	Medium
26	*EP300*	22	41525969	13.0	nonsynonymous SNV	c.T1244C	p.L415P	Driver	COSM221269	Deleterious	Medium
27	*TBL1XR1*	3	176769503	8	frameshift insertion	c.215_216insAAACC	p.L72fs	Driver	.	.	.
27	*MYC*	8	128750681	39.9	nonsynonymous SNV	c.C218A	p.T73N	Driver	COSM3316882	Deleterious	Medium
27	*MYC*	8	128750749	40.1	nonsynonymous SNV	c.T286C	p.S96P	Passenger	.	Deleterious	Low
27	*MYC*	8	128750953	23.1	nonsynonymous SNV	c.C490G	p.L164V	Driver	COSM3316932	Tolerated	Medium
27	*MYC*	8	128752788	37.1	nonsynonymous SNV	c.G949C	p.V317L	Driver	.	Deleterious	Medium
27	*MYC*	8	128752894	37.2	nonsynonymous SNV	c.G1055A	p.S352N	Driver	.	Deleterious	Medium
27	*STAT6*	12	57493818	30.1	nonsynonymous SNV	c.A1568T	p.D523V	Driver	COSM5946952	Deleterious	Low
27	*FOXO1*	13	41240288	35.5	nonsynonymous SNV	c.G62C	p.R21P	Driver	.	Deleterious	Medium

27	*SOCS1*	16	11349001	36.1	nonframeshift insertion	c.334_335insGCT	p.F112delinsCF	Driver	.	.	.
31	*MYD88*	3	38182032	38.7	nonsynonymous SNV	c.C656G	p.S219C	Driver	COSM3357705	Deleterious	Low
31	*SETD2*	3	47165947	48.9	nonsynonymous SNV	c.A179G	p.K60R	Passenger	.	Deleterious	Neutral
31	*BCL6*	3	187443370	39.1	nonsynonymous SNV	c.C1756T	p.P586S	Passenger	.	Tolerated	Neutral
31	*TET2*	4	106157768	35.4	stopgain	c.C2669A	p.S890X	Driver	.	.	.
31	*IRF4*	6	393205	7.6	nonsynonymous SNV	c.G53A	p.S18N	Driver	COSM1731950	Tolerated	Low
31	*IRF4*	6	393260	36.3	nonsynonymous SNV	c.G108T	p.K36N	Passenger	.	Tolerated	Low
31	*IRF4*	6	393262	36.3	nonsynonymous SNV	c.A110T	p.Y37F	Passenger	.	Deleterious	Low
31	*IRF4*	6	393331	32.5	nonsynonymous SNV	c.A179T	p.Q60L	Driver	.	Deleterious	Medium
31	*IRF4*	6	393334	18.0	nonsynonymous SNV	c.A182C	p.D61A	Driver	.	Deleterious	Medium
31	*ATM*	11	108160402	33.2	nonsynonymous SNV	c.G4310T	p.R1437I	Driver	.	Deleterious	Medium
31	*MAP2K1*	15	66727441	34.6	nonsynonymous SNV	c.T157G	p.F53V	Driver	COSM5077832	Deleterious	Medium
31	*BTK*	X	100617205	38.4	nonsynonymous SNV	c.C544T	p.R182W	Driver	COSM6388601	Deleterious	Neutral
33	*TP53*	17	7577094	84.5	nonsynonymous SNV	c.C844T	p.R282W	Driver	COSM10704	Deleterious	Medium
33	*MYC*	8	128750639	47.4	nonsynonymous SNV	c.C176T	p.A59V	Driver	COSM1159797	Deleterious	Medium
34	*BCL10*	1	85733340	69.9	frameshift deletion	c.672delC	p.P224fs	Driver	.	.	.
34	*BCL10*	1	85736474	66.6	nonsynonymous SNV	c.G173A	p.R58Q	Driver	COSM6205554	Tolerated	Neutral
34	*TNIP1*	5	150443224	4.3	nonsynonymous SNV	c.C221A	p.P74Q	Passenger	.	Tolerated	Low
34	*KMT2D*	12	49416417	34.5	nonsynonymous SNV	c.C16294T	p.R5432W	Driver	COSM221066	Deleterious	High
34	*KMT2D*	12	49421002	5.8	nonsynonymous SNV	c.C14747A	p.P4916Q	Driver	.	Deleterious	Medium
34	*KMT2D*	12	49426511	30.8	stopgain	c.C11977T	p.Q3993X	Driver	.	.	.
34	*KMT2D*	12	49435116	50.5	nonsynonymous SNV	c.C6437T	p.P2146L	Driver	COSM3461579	Deleterious	Low

34	*FOXO1*	13	41240288	29.1	nonsynonymous SNV	c.G62A	p.R21H	Driver	COSM5948480	Deleterious	Medium
34	*CREBBP*	16	3788618	66	nonsynonymous SNV	c.C4336T	p.R1446C	Driver	COSM88749	Deleterious	Medium
34	*CIITA*	16	10997681	35.5	nonsynonymous SNV	c.C866A	p.P289H	Passenger	.	Deleterious	Low
34	*TP53*	17	7577570	30.7	nonsynonymous SNV	c.G711A	p.M237I	Driver	COSM99648	Deleterious	Medium
34	*BCL2*	18	60985469	2.9	nonsynonymous SNV	c.G431T	p.W144L	Driver	.	Deleterious	Medium
34	*BCL2*	18	60985753	6.7	nonsynonymous SNV	c.C147G	p.F49L	Passenger	.	Tolerated	Low
34	*EP300*	22	41569723	3.3	nonsynonymous SNV	c.G4714T	p.G1572W	Driver	COSM5608364	Deleterious	Medium
35	*TET2*	4	106164875	68.5	frameshift deletion	c.3743delT	p.L1248fs	Driver	.	.	.
35	*NFKBIE*	6	44229498	8.5	frameshift deletion	c.973delC	p.R325fs	Driver	.	.	.
35	*TMEM30A*	6	75970579	49.1	nonsynonymous SNV	c.A502G	p.I168V	Driver	.	Tolerated	Medium
35	*MYC*	8	128750515	43.4	nonsynonymous SNV	c.C52G	p.L18V	Passenger	.	Tolerated	Low
35	*MYC*	8	128751013	44	nonsynonymous SNV	c.A550T	p.S184C	Passenger	.	Deleterious	Low
38	*ARID1A*	1	27023226	30.2	nonsynonymous SNV	c.C332A	p.P111H	Passenger	.	Deleterious	Low
38	*BTG2*	1	203274836	42.0	nonsynonymous SNV	c.G102T	p.R34S	Passenger	.	Tolerated	Neutral
38	*BTG2*	1	203274867	30.2	nonsynonymous SNV	c.G133A	p.A45T	Driver	COSM220663	Tolerated	Low
38	*MYD88*	3	38182641	34.6	nonsynonymous SNV	c.T794C	p.L265P	Driver	COSM85940	Deleterious	.
38	*IRF4*	6	393217	67.5	nonsynonymous SNV	c.G65A	p.G22E	Driver	COSM5711847	Tolerated	Low
38	*HIST1H1E*	6	26157108	31.4	nonsynonymous SNV	c.G490A	p.A164T	Driver	.	Tolerated	Medium
38	*PIM1*	6	37138775	36.8	nonsynonymous SNV	c.G481A	p.E161K	Passenger	.	Tolerated	Neutral
38	*PIM1*	6	37138804	35.8	nonsynonymous SNV	c.G510C	p.E170D	Driver	COSM220741	Tolerated	Neutral
38	*PIM1*	6	37138901	23.8	nonsynonymous SNV	c.C514A	p.P172T	Passenger	.	Deleterious	Low

38	*PIM1*	6	37138946	26.4	nonsynonymous SNV	c.G559A	p.V187M	Driver	COSM4610023	Deleterious	Low
38	*PIM1*	6	37138950	28.0	nonsynonymous SNV	c.G563A	p.S188N	Driver	COSM220740	Tolerated	Neutral
38	*PIM1*	6	37139063	31.1	nonsynonymous SNV	c.G676A	p.E226K	Driver	COSM1161628	Deleterious	Neutral
38	*PIM1*	6	37139073	29.8	nonsynonymous SNV	c.C686T	p.A229V	Driver	COSM5037781	Tolerated	Neutral
38	*PIM1*	6	37139204	34.4	nonsynonymous SNV	c.C817T	p.L273F	Passenger	.	Deleterious	Low
38	*PIM1*	6	37139210	35.2	nonsynonymous SNV	c.C823T	p.L275F	Driver	COSM1731954	Deleterious	Medium
38	*PIM1*	6	37141842	32.4	nonsynonymous SNV	c.G1190A	p.S397N	Passenger	.	Tolerated	Neutral
38	*PRDM1*	6	106553722	45.1	frameshift deletion	c.1687delC	p.P563fs	Driver	.	.	.
38	*CARD11*	7	2979533	6.2	nonframeshift insertion	c.713_714insTAA	p.K238delinsNK	Driver	.	.	.
38	*CARD11*	7	2979543	40.1	nonsynonymous SNV	c.G704C	p.R235P	Passenger	.	Tolerated	Low
38	*ETV6*	12	11803087	21.8	nonsynonymous SNV	c.G26A	p.S9N	Passenger	.	Tolerated	Neutral
38	*ETV6*	12	12037507	75.3	nonsynonymous SNV	c.T1138G	p.W380G	Driver	COSM5879370	Deleterious	High
38	*KMT2D*	12	49420291	22.3	nonsynonymous SNV	c.G15458A	p.R5153Q	Driver	COSM4976622	Deleterious	Medium
38	*BTG1*	12	92539209	46.8	stopgain	c.C103T	p.R35X	Driver	COSM1289866	.	.
38	*BTG1*	12	92539253	16.8	nonsynonymous SNV	c.C59T	p.S20F	Passenger	.	Deleterious	Neutral
38	*BTG1*	12	92539265	16.2	nonsynonymous SNV	c.C47A	p.A16D	Driver	.	Tolerated	Medium
38	*CD79B*	17	62006798	40.5	nonsynonymous SNV	c.A590G	p.Y197C	Driver	COSM220736	Deleterious	Neutral
38	*BCL2*	18	60985883	68.8	nonsynonymous SNV	c.G17A	p.R6K	Passenger	.	Tolerated	Low
39	*CD58*	1	117078722	43.2	stopgain	c.C493T	p.Q165X	Driver	COSM4021031	.	.
39	*BCL6*	3	187442853	14	nonsynonymous SNV	c.G1853A	p.R618H	Driver	COSM350824	Deleterious	Low
39	*BCL6*	3	187443373	9	nonsynonymous SNV	c.C1753T	p.R585W	Driver	COSM252378	Tolerated	Medium

39	*CCND3*	6	41903745	23.3	frameshift insertion	c.811dupC	p.R271fs	Driver	COSM144854	.	.
39	*BTG1*	12	92538191	30.7	nonsynonymous SNV	c.C181T	p.P61S	Driver	.	Deleterious	Medium
39	*CIITA*	16	11001150	32.9	nonsynonymous SNV	c.C1801T	p.R601W	Driver	COSM4672440	Deleterious	Low
39	*GNA13*	17	63052492	56.5	stopgain	c.C220T	p.Q74X	Driver	.	.	.
39	*EP300*	22	41572350	8.2	nonsynonymous SNV	c.C4879T	p.R1627W	Driver	COSM88784	Deleterious	High
40	*CARD11*	7	2953019	47.08	nonsynonymous SNV	c.G2921A	p.R974H	Passenger	.	Tolerated	Low
41	*PIM1*	6	37138908	44.1	nonsynonymous SNV	c.G521C	p.G174A	Passenger	.	Deleterious	Neutral
41	*SGK1*	6	134495673	55.1	nonsynonymous SNV	c.C413G	p.A138G	Driver	.	Deleterious	Medium
41	*ETS1*	11	128391823	27.3	nonsynonymous SNV	c.C67T	p.L23F	Driver	COSM220621	Tolerated	Neutral
41	*CREBBP*	16	3807853	81.6	nonsynonymous SNV	c.T3566G	p.I1189S	Driver	.	Deleterious	Medium
41	*CREBBP*	16	3807877	81.6	nonsynonymous SNV	c.T3542C	p.L1181P	Driver	.	Deleterious	Medium
41	*SOCS1*	16	11348837	29	nonsynonymous SNV	c.C499T	p.R167C	Driver	.	Deleterious	Medium
41	*SOCS1*	16	11349139	53.9	nonsynonymous SNV	c.G197C	p.R66P	Driver	COSM4170735	Tolerated	Neutral
41	*TP53*	17	7578541	70.2	nonsynonymous SNV	c.T389G	p.L130R	Driver	COSM1610872	Deleterious	Medium
44	*CARD11*	7	2984147	11.4	nonsynonymous SNV	c.C383T	p.T128M	Driver	COSM41656	Deleterious	Medium
44	*CARD11*	7	2984163	53.0	nonsynonymous SNV	c.G367A	p.G123S	Driver	COSM41655	Tolerated	Medium
44	*CREBBP*	16	3781199	28.4	frameshift deletion	c.5160_5166del	p.C1720fs	Driver	.	.	.
44	*IRF4*	6	393262	18.0	nonsynonymous SNV	c.A110T	p.Y37F	Passenger	.	Deleterious	Low
44	*BTG1*	12	92539304	23.2	nonsynonymous SNV	c.C8T	p.P3L	Passenger	.	Deleterious	Low
44	*TP53*	17	7577539	42.4	nonsynonymous SNV	c.C742T	p.R248W	Driver	COSM10656	Deleterious	Medium
44	*SMARCA4*	19	11141492	30.5	nonsynonymous SNV	c.C3469T	p.R1157W	Driver	COSM3357072	Deleterious	High
44	*MAPK1*	22	22161975	48.5	nonsynonymous SNV	c.A280G	p.T94A	Passenger	.	Tolerated	Neutral

45	*ID3*	1	23885779	95.32	nonsynonymous SNV	c.T139C	p.C47R	Driver	.	Deleterious	Medium
45	*SGK1*	6	134583148	50	nonsynonymous SNV	c.G208A	p.G70S	Passenger	.	Tolerated	.
45	*TP53*	17	7578464	82.52	frameshift deletion	c.454_466del	p.P152fs	Driver	COSM1480077	.	.
47	*BCL10*	1	85736511	3.37	frameshift deletion	c.136delA	p.I46fs	Driver	COSM391505	.	.
47	*TBL1XR1*	3	176769373	33.89	nonsynonymous SNV	c.G346T	p.A116S	Passenger	.	Tolerated	Neutral
47	*BCL6*	3	187444552	54.13	nonsynonymous SNV	c.G1675C	p.G559R	Passenger	.	Deleterious	Low
47	*TET2*	4	106155620	3.34	nonsynonymous SNV	c.C521A	p.P174H	Driver	COSM5574230	Deleterious	Neutral
47	*ATM*	11	108153600	6.97	nonsynonymous SNV	c.T3740C	p.F1247S	Driver	.	Deleterious	Medium
47	*KMT2D*	12	49433388	36.68	stopgain	c.C8059T	p.R2687X	Driver	COSM220685	.	.
47	*KMT2D*	12	49441815	32.15	frameshift insertion	c.4168dupG	p.A1390fs	Driver	COSM2007252	.	.
47	*TP53*	17	7577586	40.34	nonsynonymous SNV	c.T695G	p.I232S	Driver	COSM1172473	Deleterious	Medium
47	*TP53*	17	7579361	33.41	nonsynonymous SNV	c.T326C	p.F109S	Driver	COSM148180	Deleterious	Medium
47	*TCF3*	19	1625601	51.79	nonsynonymous SNV	c.G473A	p.R158Q	Driver	.	Deleterious	Medium
47	*MAPK1*	22	22221709	3.11	nonframeshift deletion	c.20_22del	p.7_8del	Driver	COSM4700513	.	.
47	*EP300*	22	41546158	45.15	nonsynonymous SNV	c.C2773A	p.P925T	Driver	COSM88779	Deleterious	Low
48	*PIK3CD*	1	9780849	34.5	nonsynonymous SNV	c.A1571C	p.Y524S	Passenger	.	Tolerated	Neutral
48	*PIK3CD*	1	9784870	48	nonsynonymous SNV	c.G2873A	p.G958D	Passenger	.	Tolerated	Neutral
48	*ID3*	1	23885778	37	nonsynonymous SNV	c.G140C	p.C47S	Driver	.	Deleterious	Medium
48	*ARID1A*	1	27024002	29.5	frameshift deletion	c.1108delG	p.G370fs	Driver	COSM4613001	.	.
48	*NOTCH2*	1	120459185	45.5	nonsynonymous SNV	c.A6160T	p.M2054L	Passenger	.	Tolerated	Low
48	*BTG2*	1	203274817	35	nonsynonymous SNV	c.G83C	p.G28A	Driver	.	Deleterious	Medium

48	*BTG2*	1	203274826	34.6	nonsynonymous SNV	c.G92C	p.S31T	Driver	COSM6205695	Tolerated	Medium
48	*BTG2*	1	203274867	34.6	nonsynonymous SNV	c.G133A	p.A45T	Driver	COSM220663	Tolerated	Low
48	*BTG2*	1	203274874	32.2	nonsynonymous SNV	c.C140T	p.T47I	Passenger	.	Tolerated	Low
48	*BTG2*	1	203276252	39	nonsynonymous SNV	c.T163C	p.F55L	Driver	.	Deleterious	Medium
48	*HIST1H1E*	6	26157278	48.8	stoploss	c.G660C	p.X220Y	Driver	COSM4429012	.	.
48	*PIM1*	6	37138402	33.1	nonsynonymous SNV	c.C324G	p.C108W	Passenger	.	Tolerated	Neutral
48	*PIM1*	6	37138804	38.2	nonsynonymous SNV	c.G510C	p.E170D	Driver	COSM220741	Tolerated	Neutral
48	*PIM1*	6	37139237	37.3	nonsynonymous SNV	c.C850G	p.L284V	Driver	COSM4610415	Deleterious	Neutral
48	*SGK1*	6	134495154	56	nonsynonymous SNV	c.C502T	p.P168S	Driver	COSM220581	Tolerated	Neutral
48	*SGK1*	6	134495155	55.9	nonsynonymous SNV	c.C501G	p.N167K	Passenger	.	Tolerated	Low
48	*ACTB*	7	5569221	39.9	nonsynonymous SNV	c.G68C	p.G23A	Driver	.	.	High
48	*ACTB*	7	5569280	33.3	nonsynonymous SNV	c.T9A	p.D3E	Passenger	.	.	Neutral
48	*ETS1*	11	128391849	53.1	nonsynonymous SNV	c.T41C	p.I14T	Passenger	.	Tolerated	Low
48	*ETS1*	11	128391865	53.8	nonsynonymous SNV	c.C25T	p.P9S	Driver	COSM5703912	Deleterious	Low
48	*KMT2D*	12	49420341	23	nonsynonymous SNV	c.T15408G	p.H5136Q	Driver	.	Deleterious	High
48	*BTG1*	12	92539203	51.8	nonsynonymous SNV	c.C109A	p.L37M	Driver	COSM1580631	Deleterious	Medium
48	*B2M*	15	45003764	54.3	stopgain	c.T20G	p.L7X	Driver	.	.	.
48	*CREBBP*	16	3781809	38.9	nonsynonymous SNV	c.A4858C	p.K1620Q	Driver	.	Deleterious	Medium
48	*SOCS1*	16	11348888	4.8	nonsynonymous SNV	c.C448G	p.L150V	Driver	COSM5714368	Deleterious	Medium
48	*TP53*	17	7578406	76.1	nonsynonymous SNV	c.G524A	p.R175H	Driver	COSM10648	Deleterious	Medium
48	*EP300*	22	41537161	45.3	nonsynonymous SNV	c.G1988T	p.G663V	Passenger	.	Deleterious	Low
49	*MYD88*	3	38182641	54.2	nonsynonymous SNV	c.T794C	p.L265P	Driver	COSM85940	Deleterious	.

49	*BCL6*	3	187442758	28.4	nonsynonymous SNV	c.C1948G	p.R650G	Driver	.	Deleterious	Medium
49	*PIM1*	6	37138424	25.9	nonsynonymous SNV	c.C346G	p.L116V	Driver	COSM220737	Tolerated	Neutral
49	*KMT2D*	12	49425023	46.8	nonsynonymous SNV	c.G13465A	p.G4489R	Passenger	.	Deleterious	Low
49	*SOCS1*	16	11349329	7	nonsynonymous SNV	c.G7A	p.A3T	Driver	COSM36139	Deleterious	Low
49	*IRF8*	16	85954874	80.2	stopgain	c.C1267T	p.Q423X	Driver	.	.	.
50	*TNFRSF14*	1	2489271	34.74	nonsynonymous SNV	c.C176T	p.P59L	Driver	.	Deleterious	Medium
50	*KMT2D*	12	49420438	71.98	nonsynonymous SNV	c.G15311A	p.C5104Y	Driver	COSM1299424	Deleterious	High
50	*KMT2D*	12	49425447	23.23	frameshift deletion	c.13040_13041del	p.Q4347fs	Driver	.	.	.
50	*BTG1*	12	92539204	27.1	nonsynonymous SNV	c.G108C	p.Q36H	Driver	COSM220612	Deleterious	Medium
50	*FOXO1*	13	41240289	43.37	nonsynonymous SNV	c.C61G	p.R21G	Driver	COSM1161087	Deleterious	Medium
50	*CREBBP*	16	3786704	46.21	nonsynonymous SNV	c.T4507G	p.Y1503D	Driver	COSM88743	Deleterious	High
50	*BCL2*	18	60985725	78.72	nonsynonymous SNV	c.C175G	p.P59A	Driver	COSM220907	Tolerated	Low
51	*KLHL6*	3	183209879	49	nonsynonymous SNV	c.G1702A	p.E568K	Passenger	.	Deleterious	Low
51	*TET2*	4	106180796	51	nonsynonymous SNV	c.G3824T	p.G1275V	Driver	.	Deleterious	Medium
51	*PIM1*	6	37138559	1.8	nonsynonymous SNV	c.G366T	p.K122N	Passenger	.	Deleterious	Neutral
51	*MYC*	8	128750638	12.6	nonsynonymous SNV	c.G175A	p.A59T	Driver	COSM1581274	Deleterious	Medium
51	*DIS3*	13	73351589	39.3	nonsynonymous SNV	c.T623C	p.I208T	Driver	COSM6495430	Tolerated	Neutral
52	*TNFRSF14*	1	2489883	46.32	frameshift insertion	c.280_281insTG	p.L94fs	Driver	.	.	.
52	*CD58*	1	117086942	46.09	frameshift deletion	c.352_355del	p.L118fs	Driver	COSM5704865	.	.
52	*PRDM1*	6	106552892	45.44	nonsynonymous SNV	c.G857C	p.R286P	Passenger	.	Tolerated	Neutral
52	*ATM*	11	108123551	45	nonsynonymous SNV	c.C1810T	p.P604S	Driver	COSM22499	Tolerated	Medium
52	*ATM*	11	108160480	46.42	nonsynonymous SNV	c.T4388G	p.F1463C	Driver	COSM5020988	Deleterious	Medium

52	*KRAS*	12	25378647	36.59	nonsynonymous SNV	c.A351C	p.K117N	Driver	COSM1256061	Deleterious	High
52	*CREBBP*	16	3789627	32.14	nonsynonymous SNV	c.G4232A	p.G1411E	Driver	COSM166405	Deleterious	High
52	*PRKCB*	16	23847647	36.57	nonsynonymous SNV	c.A151T	p.S51C	Driver	.	Deleterious	Medium
52	*STAT3*	17	40475070	33.85	nonsynonymous SNV	c.A1840C	p.S614R	Driver	COSM4066548	Tolerated	Medium
57	*MYD88*	3	38182641	53.85	nonsynonymous SNV	c.T794C	p.L265P	Driver	COSM85940	Deleterious	.
57	*PIM1*	6	37138424	26.19	nonsynonymous SNV	c.C346G	p.L116V	Driver	COSM220737	Tolerated	Neutral
57	*PIM1*	6	37138577	32.61	nonsynonymous SNV	c.G384C	p.Q128H	Driver	COSM220744	Tolerated	Neutral
57	*PIM1*	6	37139063	37.14	nonsynonymous SNV	c.G676A	p.E226K	Driver	COSM1161628	Deleterious	Neutral
57	*TMEM30A*	6	75994249	29.03	stopgain	c.C106T	p.Q36X	Driver	.	.	.
60	*TNFRSF14*	1	2489234	27.51	nonsynonymous SNV	c.T139A	p.Y47N	Driver	.	Deleterious	Medium
60	*PIM1*	6	37138423	14.69	nonsynonymous SNV	c.G345C	p.K115N	Driver	COSM220742	Tolerated	Neutral
60	*SGK1*	6	134494704	30	nonsynonymous SNV	c.C514T	p.P172S	Driver	COSM1161569	Tolerated	Low
60	*CARD11*	7	2985468	58.12	nonsynonymous SNV	c.T343G	p.F115V	Driver	COSM43452	Deleterious	Low
60	*SOCS1*	16	11349162	21.9	nonsynonymous SNV	c.C174G	p.F58L	Driver	COSM5576343	Deleterious	Low
60	*TCF3*	19	1650226	53.78	nonsynonymous SNV	c.G22T	p.A8S	Driver	COSM1391233	Deleterious	Medium
62	*TNFRSF14*	1	2488107	28.22	frameshift deletion	c.4_11del	p.E2fs	Driver	.	.	.
62	*PIK3CD*	1	9784870	47.84	nonsynonymous SNV	c.G2873A	p.G958D	Passenger	.	Tolerated	Neutral
62	*FBXW7*	4	153332910	45.49	nonframeshift insertion	c.45_46insCCT	p.G16delinsPG	Driver	COSM27061	.	.
62	*TMEM30A*	6	75970600	39.71	stopgain	c.C481T	p.R161X	Driver	COSM4640744	.	.
62	*CREBBP*	16	3786704	64.1	nonsynonymous SNV	c.T4507C	p.Y1503H	Driver	COSM88744	Deleterious	High
62	*BCL2*	18	60985385	32.73	nonsynonymous SNV	c.A515G	p.N172S	Driver	COSM220854	Tolerated	Neutral
62	*BCL2*	18	60985756	35.18	nonsynonymous SNV	c.C144G	p.I48M	Passenger	.	Tolerated	Low

64	*BTG2*	1	203274870	24.44	nonsynonymous SNV	c.C136T	p.L46F	Driver	.	Deleterious	Medium
64	*MYD88*	3	38181430	59.5	nonsynonymous SNV	c.A443T	p.D148V	Driver	.	Deleterious	Medium
64	*HIST1H1E*	6	26156745	21.74	nonsynonymous SNV	c.C127G	p.L43V	Driver	COSM5948934	Deleterious	Medium
64	*TNFAIP3*	6	138199594	42.47	stopgain	c.G1012T	p.E338X	Driver	.	.	.
64	*KMT2D*	12	49425776	21.49	frameshift insertion	c.12711dupA	p.R4238fs	Driver	.	.	.
64	*TP53*	17	7577539	42.61	nonsynonymous SNV	c.C742T	p.R248W	Driver	COSM10656	Deleterious	Medium
64	*TCF3*	19	1615691	75.39	nonsynonymous SNV	c.G1580A	p.R527Q	Driver	COSM5020244	Deleterious	Medium
65	*ID3*	1	23885728	20.05	nonsynonymous SNV	c.C190G	p.L64V	Driver	COSM6210845	Tolerated	Neutral
65	*ARID1A*	1	27023957	21.54	stopgain	c.C1063T	p.Q355X	Driver	.	.	.
65	*BCL10*	1	85736511	2.94	frameshift deletion	c.136delA	p.I46fs	Driver	COSM391505	.	.
65	*BTG2*	1	203274762	4071	nonsynonymous SNV	c.C28T	p.L10F	Passenger	.	Tolerated	Low
65	*BTG2*	1	203274853	19.13	frameshift deletion	c.119_131del	p.G40fs	Driver	.	.	.
65	*BTG2*	1	203274858	19.57	nonsynonymous SNV	c.C124T	p.L42F	Driver	COSM5714747	Deleterious	Medium
65	*BTG2*	1	203276264	34.76	nonsynonymous SNV	c.C175T	p.P59S	Driver	.	Deleterious	Medium
65	*BTG2*	1	203276434	12.81	nonsynonymous SNV	c.G345C	p.E115D	Driver	.	Deleterious	Medium
65	*SETD2*	3	47164447	5.85	nonsynonymous SNV	c.C1679T	p.S560L	Driver	COSM1495563	Deleterious	Medium
65	*SETD2*	3	47164451	5.85	nonsynonymous SNV	c.C1675G	p.L559V	Passenger	.	Tolerated	Low
65	*HIST1H1E*	6	26156811	16.98	nonsynonymous SNV	c.G193C	p.A65P	Driver	COSM145482	Deleterious	Medium
65	*HIST1H1E*	6	26156840	16.05	nonsynonymous SNV	c.G222C	p.E74D	Passenger	.	Tolerated	Neutral
65	*HIST1H1E*	6	26156985	18.83	nonsynonymous SNV	c.G367A	p.A123T	Passenger	.	Tolerated	Low
65	*HIST1H1E*	6	26157183	19.18	nonsynonymous SNV	c.G565C	p.A189P	Driver	.	Tolerated	Medium
65	*PIM1*	6	37138254	20.63	nonsynonymous SNV	c.G176C	p.S59T	Passenger	.	.	Neutral

65	*PIM1*	6	37138345	19.39	nonsynonymous SNV	c.G267C	p.E89D	Passenger	.	.	Neutral
65	*PIM1*	6	37138354	36.91	nonsynonymous SNV	c.G276A	p.M92I	Driver	COSM5656321	Deleterious	Neutral
65	*PIM1*	6	37138563	18.64	nonsynonymous SNV	c.C370T	p.P124S	Driver	COSM3076476	Tolerated	Neutral
65	*PIM1*	6	37138599	19.25	nonsynonymous SNV	c.G406T	p.G136C	Driver	.	Deleterious	High
65	*TMEM30A*	6	75965985	19.13	stopgain	c.C919T	p.R307X	Driver	COSM5949563	.	.
65	*CARD11*	7	2983886	31.39	nonsynonymous SNV	c.A644T	p.K215M	Driver	COSM1089012	Deleterious	Medium
65	*KMT2D*	12	49431880	30.6	nonsynonymous SNV	c.C9259T	p.R3087W	Driver	COSM1257782	Deleterious	Low
65	*KMT2D*	12	49435761	11.37	nonsynonymous SNV	c.G6122A	p.R2041H	Driver	COSM240688	Deleterious	Low
65	*KMT2D*	12	49446763	35.63	stopgain	c.T1047A	p.C349X	Driver	.	.	.
65	*BTG1*	12	92537944	16.17	nonsynonymous SNV	c.T428C	p.V143A	Passenger	.	Tolerated	Low
65	*BTG1*	12	92539176	13.62	nonsynonymous SNV	c.G136C	p.E46Q	Passenger	.	Tolerated	Low
65	*FOXO1*	13	41239894	18.77	nonsynonymous SNV	c.C456G	p.S152R	Passenger	.	Deleterious	Low
65	*FOXO1*	13	41240135	20.59	nonsynonymous SNV	c.G215C	p.S72T	Passenger	.	Tolerated	Neutral
65	*SOCS1*	16	11348743	14.7	nonsynonymous SNV	c.C593G	p.P198R	Passenger	.	Tolerated	Low
65	*SOCS1*	16	11348791	19.72	nonsynonymous SNV	c.T545G	p.I182S	Driver	.	Deleterious	Medium
65	*SOCS1*	16	11348972	15.82	nonsynonymous SNV	c.G364A	p.G122R	Driver	COSM6204584	Deleterious	Low
65	*SOCS1*	16	11349040	22.42	frameshift deletion	c.295_296del	p.G99fs	Driver	COSM5576345	.	.
65	*SOCS1*	16	11349096	22.41	stopgain	c.C240A	p.Y80X	Driver	COSM36135	.	.
65	*SOCS1*	16	11349097	22.88	nonsynonymous SNV	c.A239G	p.Y80C	Driver	.	Deleterious	High
65	*IRF8*	16	85942651	4.83	nonsynonymous SNV	c.C230T	p.T77I	Driver	.	Deleterious	Medium
65	*STAT3*	17	40474474	18.99	nonsynonymous SNV	c.C1927A	p.Q643K	Driver	COSM4381079	Tolerated	Neutral
65	*CD79B*	17	62007590	24.5	nonsynonymous SNV	c.G277C	p.E93Q	Passenger	.	Tolerated	Low

65	*GNA13*	17	63052533	21.2	nonsynonymous SNV	c.G179A	p.G60D	Driver	.	Deleterious	High
65	*GNA13*	17	63052633	21.28	stopgain	c.C79T	p.Q27X	Driver	COSM982995	.	.
65	*BCL2*	18	60985329	20	nonsynonymous SNV	c.G571A	p.D191N	Passenger	.	Deleterious	Low
65	*BCL2*	18	60985514	19.06	nonsynonymous SNV	c.G386A	p.R129H	Driver	COSM220813	Deleterious	Medium
65	*BCL2*	18	60985530	18.68	nonsynonymous SNV	c.T370C	p.F124L	Driver	COSM6212919	Tolerated	Neutral
65	*BCL2*	18	60985542	18.79	nonsynonymous SNV	c.C358T	p.H120Y	Driver	COSM5715145	Deleterious	Low
65	*BCL2*	18	60985562	16.8	nonsynonymous SNV	c.C338G	p.A113G	Driver	COSM3357021	Deleterious	Neutral
65	*BCL2*	18	60985635	10.36	nonsynonymous SNV	c.G265A	p.V89M	Passenger	.	Deleterious	Low
65	*BCL2*	18	60985639	10.86	nonsynonymous SNV	c.C261G	p.S87R	Driver	COSM220916	Tolerated	Neutral
65	*BCL2*	18	60985644	11.9	nonsynonymous SNV	c.C256G	p.L86V	Driver	COSM2881858	Tolerated	Neutral
65	*BCL2*	18	60985700	19.9	nonsynonymous SNV	c.C200T	p.A67V	Passenger	.	Tolerated	Low
65	*BCL2*	18	60985704	19.8	nonsynonymous SNV	c.G196T	p.V66F	Driver	COSM220903	Tolerated	Neutral
65	*BCL2*	18	60985706	20.5	nonsynonymous SNV	c.C194T	p.P65L	Passenger	.	Tolerated	Neutral
65	*BCL2*	18	60985721	21.29	nonsynonymous SNV	c.C179T	p.A60V	Driver	COSM220803	Tolerated	Low
65	*BCL2*	18	60985724	21.57	nonsynonymous SNV	c.C176T	p.P59L	Driver	COSM220815	Tolerated	Neutral
65	*CD70*	19	6590137	25.69	nonsynonymous SNV	c.C173T	p.A58V	Driver	.	Deleterious	Medium
65	*CD70*	19	6590138	30	nonsynonymous SNV	c.G172A	p.A58T	Driver	.	Deleterious	Medium
65	*BTK*	X	100629530	22.22	nonsynonymous SNV	c.G234T	p.Q78H	Passenger	.	Deleterious	Low
68	*ARID1A*	1	27023873	27.69	stopgain	c.A979T	p.K327X	Driver	.	.	.
68	*BCL10*	1	85733491	20.11	stopgain	c.T521A	p.L174X	Driver	.	.	.
68	*NOTCH2*	1	120458665	23.58	frameshift insertion	c.6679dupC	p.H2227fs	Driver	.	.	.
68	*BTG2*	1	203274817	24.78	nonsynonymous SNV	c.G83A	p.G28D	Driver	COSM5946364	Tolerated	Medium

68	*MYD88*	3	38182292	29.85	nonsynonymous SNV	c.G728A	p.S243N		Driver	COSM3927375	Deleterious	.
68	*PIM1*	6	37138924	22.88	nonsynonymous SNV	c.G537A	p.M179I		Passenger	.	Deleterious	Neutral
68	*TNFAIP3*	6	138201320	26.53	stopgain	c.C2019A	p.Y673X		Driver	.	.	.
68	*KMT2D*	12	49420214	24.27	nonsynonymous SNV	c.C15535T	p.R5179C		Driver	COSM5704466	Deleterious	Medium
68	*KMT2D*	12	49427113	22.64	frameshift deletion	c.11375delC	p.P3792fs		Driver	.	.	.
68	*KMT2D*	12	49440429	27.64	frameshift insertion	c.4380dupA	p.L1461fs		Driver	.	.	.
68	*KMT2D*	12	49440446	27.92	nonsynonymous SNV	c.A4364T	p.Y1455F		Passenger	.	Deleterious	Low
68	*CREBBP*	16	3794922	16.05	stopgain	c.C3955T	p.R1319X		Driver	COSM4848624	.	.
68	*PRKCB*	16	24226003	18.93	nonsynonymous SNV	c.G1888A	p.D630N		Driver	COSM5650924	Deleterious	.
68	*XBP1*	22	29196469	51.77	nonsynonymous SNV	c.C44T	p.P15L		Driver	.	Deleterious	Medium
68	*BTK*	X	100617642	21.14	nonsynonymous SNV	c.C427A	p.H143N		Driver	.	Deleterious	Medium
70	*PIM1*	6	37138352	16.87	nonsynonymous SNV	c.A274G	p.M92V	Only Ampliseq	Passenger	.	Tolerated	Neutral
70	*CARD11*	7	2983885	14.88	nonsynonymous SNV	c. G645T	p.K215N	Only Ampliseq	Driver	COSM85974	.	medium
70	*TNFAIP3*	6	138192659	13	splicesite deletion	c.295_295+8del	p.?	Only Ampliseq	Driver	.	.	.
71	*TET2*	4	106158349	6.60	stopgain	c.C3250T	p.Q1084X		Driver	.	.	.
71	*IRF4*	6	393187	34.70	nonsynonymous SNV	c.T35G	p.F12C	Verified	Passenger	.	Tolerated	Neutral
71	*IRF4*	6	393190	35.20	nonsynonymous SNV	c.G38C	p.G13A	Verified	Passenger	.	Deleterious	Low
71	*IRF4*	6	393208	34.70	nonsynonymous SNV	c.G56T	p.C19F	Verified	Driver	.	Deleterious	Medium
71	*IRF4*	6	393252	24.00	nonsynonymous SNV	c.A100G	p.S34G	Verified	Driver	.	Deleterious	Medium
71	*IRF4*	6	393260	35.30	nonsynonymous SNV	c.G108T	p.K36N	Verified	Passenger	.	Tolerated	Low
71	*IRF4*	6	393295	24.20	nonsynonymous SNV	c.G143A	p.S48N	Verified	Passenger	.	Deleterious	Neutral
71	*IRF4*	6	393332	32.80	nonsynonymous SNV	c.G180C	p.Q60H	Verified	Driver	COSM220750	Deleterious	Neutral

71	*IRF4*	6	393342	31.10	nonsynonymous SNV	c.C190T	p.R64C	Verified	Passenger	.	Deleterious	Low
71	*PRDM1*	6	106547182	38.10	frameshift deletion	c.419delC	p.S140fs	Verified	Driver	.	.	.
71	*KMT2D*	12	49425350	48.40	nonsynonymous SNV	c.C13138A	p.P4380T		Passenger	.	Deleterious	Neutral
71	*B2M*	15	45003747	7.60	nonsynonymous SNV	c.G3T	p.M1I		Driver	COSM4055093	Deleterious	.
71	*B2M*	15	45007691	30.60	stopgain	c.T138G	p.Y46X		Driver	.	.	.
71	*B2M*	15	45007811	8.40	stopgain	c.C258G	p.Y86X		Driver	COSM144532	.	.
71	*CIITA*	16	11000810	43.30	nonsynonymous SNV	c.C1461G	p.I487M		Driver	COSM3887868	Tolerated	Medium
72	*MYD88*	3	38181433	90.40	nonsynonymous SNV	c.G446A	p.S149N		Driver	COSM85949	Deleterious	Medium
72	*TBL1XR1*	3	176750839	41.40	nonsynonymous SNV	c.T1336A	p.Y446N		Driver	COSM4440704	Deleterious	Neutral
72	*NOTCH1*	9	139389621	47.10	UTR3				Driver	.	.	.
72	*KMT2D*	12	49427266	14.60	nonframeshift deletion	c.11220_11222del	p.3740_3741del		Driver	COSM5160496	.	.
72	*BTG1*	12	92538182	41.60	nonsynonymous SNV	c.G190A	p.G64R		Driver	.	Deleterious	Medium
72	*BTG1*	12	92539244	42.70	nonsynonymous SNV	c.C68T	p.S23F		Driver	.	Tolerated	Medium
72	*PRKCB*	16	24226078	29.50	nonsynonymous SNV	c.G1963A	p.E655K		Driver	.	Deleterious	.
73	*MYD88*	3	38182641	78.00	nonsynonymous SNV	c.T794C	p.L265P	Verified	Driver	COSM85940	Deleterious	.
73	*TBL1XR1*	3	176750838	68.90	nonsynonymous SNV	c.A1337G	p.Y446C		Passenger	.	Deleterious	Low
73	*TET2*	4	106156981	6.00	stopgain	c.G1882T	p.E628X		Driver	COSM1309587	.	.
73	*PIM1*	6	37138802	32.80	nonsynonymous SNV	c.G508A	p.E170K	Verified	Driver	COSM4610152	Tolerated	Neutral
73	*PRDM1*	6	106534471	51.40	splicing			Verified	Driver	.	.	.
73	*PRDM1*	6	106554273	49.30	nonsynonymous SNV	c.C1801T	p.R601W	Verified	Driver	.	Deleterious	Medium
73	*SGK1*	6	134495151	27.10	frameshift deletion	c.490_505del	p.M164fs		Driver	.	.	.
73	*TCF3*	19	1615767	50.80	nonsynonymous SNV	c.A1504G	p.K502E		Driver	COSM4944323	Tolerated	Low

73	*DDX3X*	X	41205861	33.40	nonsynonymous SNV	c.G1601A	p.R534H		Driver	COSM302036	Deleterious	High
74	*ID3*	1	23885655	26.80	nonsynonymous SNV	c.C263A	p.A88D		Passenger	.	Tolerated	Low
74	*MYD88*	3	38182641	50.40	stoploss	c.T794C	p.L265P	Verified	Driver	COSM85940	Deleterious	.
74	*KLHL6*	3	183273193	36.60	nonsynonymous SNV	c.C249G	p.F83L		Driver	.	Deleterious	Medium
74	*KLHL6*	3	183273257	38.30	nonsynonymous SNV	c.T185C	p.L62P		Driver	.	Deleterious	High
74	*PIM1*	6	37138369	37.00	nonframeshift deletion	c.291_296del	p.97_99del	Verified	Driver	.	.	.
74	*PIM1*	6	37138549	41.90	nonsynonymous SNV	c.G356A	p.G119D		Driver	COSM1581462	Deleterious	Neutral
74	*PIM1*	6	37138563	40.50	nonsynonymous SNV	c.C370A	p.P124T	Verified	Driver	COSM3076476	Tolerated	Neutral
74	*PIM1*	6	37138808	41.40	splicing			Verified	Driver	.	.	.
74	*PIM1*	6	37139063	20.80	nonsynonymous SNV	c.G676C	p.E226Q	Verified	Driver	COSM1161628	Deleterious	Neutral
74	*PIM1*	6	37139247	7.80	nonsynonymous SNV	c.C860T	p.T287I	Verified	Passenger	.	Deleterious	Low
74	*KMT2D*	12	49425644	75.10	stopgain	c.C12844T	p.R4282X		Driver	COSM3461536	.	.
74	*CREBBP*	16	3828740	5.90	nonsynonymous SNV	c.G1902T	p.K634N		Passenger	.	Deleterious	Low
74	*SOCS1*	16	11348908	34.00	nonsynonymous SNV	c.G428A	p.S143N		Passenger	.	Tolerated	Low

Chr- chromosome, * Only for cases uniquely analysed by AmpliSeq technology; VAF: variant allelic frequency: AA: aminoacid

Supplemental Table 6. aSHM patterns in frequently mutated genes (>2 cases) affected with more than 1.5 mutation per case

Gene name	Total SNV	Mutated cases	Mutations/ case	Variants within 2kb# from TSS (percentage)	Transition over transversions (expected 0.33)	AID motif* (percentage)
PIM1	76	25	3,04	75 (0.99)	0,95	47 (0.62)
IRF4	30	9	3,33	30 (1.00)	0,50	18 (0.60)
BCL2	26	8	3,25	26 (1.00)	1,60	9 (0.35)
BTG2	24	12	2,00	21 (0.88)	1,40	14 (0.67)
HIST1H1E	23	13	1,77	23 (1.00)	0,92	13 (0.57)
SOCS1	18	8	2,25	18 (1.00)	0,64	8 (0.44)
BTG1	16	10	1,60	16 (1.00)	1,29	7 (0.44)
MYC	11	6	1,83	9 (0.82)	0,83	4 (0.44)

*AID motifs including WA/TW/WRCY/RGYW/WGCW

2kb after 150bp from TSS

Supplemental Table 7. Clinical features in the 3 groups of DLBL-AE

Parameter		**Group 1**	**Group 2**	**Group 3**
Mean age (range)		70 (38-84)	67 (37-85)	68 (44-87)
M:F		7:6	3:8	9:17
Died of disease (%)		1/7*; 14%	2/9; 22%	7/21; 33%
total driver mutations		73	96	220
Mean driver mutations/ case		5.5	10.7	8.84
Nodal: extranodal localization		4:9	5:6	12:14
Extranodal localization	Waldeyer´s ring	4	2	3
	GI tract	1	3	3
	Other	4	1	8

*The patient died of other cause

Supplemental Table 8. List of copy number (CN) and copy number neutral loss-of-heterozygosity (CNN-LOH) detected in 9 cases with *IRF4* rearrangement

Case	Chromosome Region	Event	Length	Cytoband
2	chr1:145,394,955-176,433,750	CN Gain	31038796	q21.1 - q25.2
2	chr2:1-243,199,373	CN Gain	243199373	p25.3 - q37.3
2	chr2:1-243,199,373	CNN-LOH	243199373	p25.3 - q37.3
2	chr3:100,295,624-198,022,430	CNN-LOH	97726807	q12.2 - q29
2	chr6:27,879,982-34,513,731	CNN-LOH	6633750	p22.1 - p21.31
2	chr7:1-159,138,663	CN Gain	159138663	p22.3 - q36.3
2	chr11:46,231,502-51,575,951	CNN-LOH	5344450	p11.2 - p11.12
2	chr16:1-90,354,753	CN Gain	90354753	p13.3 - q24.3
2	chr17:5,134,814-22,217,883	CN Loss	17083070	p13.2 - p11.1
2	chr17:33,433,487-36,131,437	CN Gain	2697951	q12
2	chr17:51,340,859-57,700,581	CN Gain	6359723	q22 - q23.1
2	chr18:60,972,718-78,007,784	CN Gain	17035067	q21.33 - q23
2	chr19:32,441,437-40,811,700	CN Gain	8370264	q13.11 - q13.2
2	chr19:44,906,110-52,301,860	CN Gain	7395751	q13.31 - q13.41
2	chr19:54,111,610-59,093,239	CN Gain	4981630	q13.42 - q13.43
5	chr7:61,064,518-67,097,366	CNN-LOH	6032849	q11.1 - q11.22
16	chr1:145,675,931-249,212,878	CN Gain	103536948	q21.1 - q44
16	chr3:63,411-81,293,080	CNN-LOH	81229670	p26.3 - p12.2
16	chr3:60,357,822-60,733,152	Homozygous Copy Loss	375331	p14.2
16	chr3:60,753,662-65,744,236	CN Loss	4990575	p14.2 - p14.1
16	chr3:81,107,048-197,852,564	CN Gain	116745517	p12.2 - q29
16	chr4:31,581,408-32,187,861	CN Loss	606454	p15.1
16	chr4:63,814,158-64,161,946	CN Loss	347789	q13.1
16	chr4:68,358,331-68,635,072	CN Loss	276742	q13.2
16	chr4:133,772,987-134,113,822	CN Loss	340836	q28.3
16	chr5:29,171,031-29,482,956	CN Loss	311926	p13.3
16	chr5:130,399,290-130,692,045	CN Gain	292756	q23.3 - q31.1
16	chr5:176,555,523-177,093,058	CN Loss	537536	q35.2 - q35.3
16	chr6:204,909-36,732,431	CNN-LOH	36527523	p25.3 - p21.2
16	chr7:110,440,775-110,855,600	CN Loss	414826	q31.1
16	chr8:59,753,928-60,041,634	Homozygous Copy Loss	287707	q12.1
16	chr9:204,738-21,853,221	CN Gain	21648484	p24.3 - p21.3
16	chr9:21,856,470-22,000,841	Homozygous Copy Loss	144372	p21.3
16	chr9:22,081,850-141,054,761	CN Gain	118972912	p21.3 - q34.3
16	chr9:70,984,372-141,054,761	CNN-LOH	70070390	q21.11 - q34.3
16	chr11:32,199,488-41,154,796	High Copy Gain	8955309	p13 - p12
16	chr12:189,400-133,818,115	CNN-LOH	133628716	p13.33 - q24.33

16	chr12:112,893,995-119,012,658	CN Loss	6118664	q24.13 - q24.23
16	chr13:54,581,087-54,979,022	CN Loss	397936	q14.3
16	chr13:89,714,311-91,115,213	CN Loss	1400903	q31.2 - q31.3
16	chr14:80,843,527-81,704,787	CN Gain	861261	q31.1
16	chr17:400,959-21,516,719	CN Loss	21115761	p13.3 - p11.2
16	chr17:73,185,657-73,452,956	CN Loss	267300	q25.1
16	chr18:12,842-15,377,471	CN Loss	15364630	p11.32 - p11.21
16	chr18:18,554,307-78,007,784	CN Gain	59453478	q11.1 - q23
16	chr19:4,159,873-4,424,296	CN Loss	264424	p13.3
16	chr19:37,088,965-37,353,791	Homozygous Copy Loss	264827	q13.12
16	chr20:69,094-62,912,463	CN Gain	62843370	p13 - q13.33
16	chrX:177,942-155,219,364	CN Loss	155041423	p22.33 - q28
31	chr11:45,839,889-51,575,951	CNN-LOH	5736063	p11.2 - p11.12
31	chr22:23,096,298-51,213,826	CNN-LOH	28117529	q11.22 - q13.33
44	chr1:187,882,589-188,836,200	CN Loss	953612	q31.1
44	chr4:69,404-48,229,961	CN Loss	48160558	p16.3 - p11
44	chr6:528,776-8,269,304	CN Loss	7740529	p25.3 - p24.3
44	chr6:65,503,314-170,913,051	CN Loss	105409738	q12 - q27
44	chr9:1-39,220,226	CN Gain	39220226	p24.3 - p13.1
44	chr17:400,959-18,928,388	CN Loss	18527430	p13.3 - p11.2
44	chr17:19,144,055-21,369,629	CN Gain	2225575	p11.2
44	chrX:177,942-155,219,364	CN Loss	155041423	p22.33 - q28
71	chr1:754,192-121,350,934	CN Loss	120596743	p36.33 - p11.2
71	chr4:182,572,102-190,915,650	CNN-LOH	8343549	q34.3 - q35.2
71	chr6:93,956,769-159,703,212	CN Loss	65746444	q16.1 - q25.3
71	chr8:104,226,946-111,457,175	CNN-LOH	7230230	q22.3 - q23.2
71	chr9:80,087,031-86,179,563	CNN-LOH	6092533	q21.2 - q21.32
71	chr10:126,070-39,146,676	CN Gain	39020607	p15.3 - p11.1
71	chr11:192,764-128,381,867	CN Gain	128189104	p15.5 - q24.3
71	chr11:128,383,077-128,691,976	High Copy Gain	308900	q24.3
71	chr11:128,701,541-134,938,847	CN Gain	6237307	q24.3 - q25
71	chr15:20,161,372-102,397,317	CN Loss	82235946	q11.1 - q26.3
71	chr16:30,098,380-35,271,725	CNN-LOH	5173346	p11.2 - p11.1
71	chr16:64,920,476-81,492,311	CNN-LOH	16571836	q21 - q23.2
71	chr17:3,838,626-16,564,034	CN Loss	12725409	p13.2 - p11.2
71	chr17:17,103,251-18,529,604	CN Loss	1426354	p11.2
71	chr19:247,232-19,720,028	CNN-LOH	19472797	p13.3 - p13.11
74	chr1:140,581-106,783,257	CN Loss	106642677	p36.33 - p21.1
74	chr1:109,633,873-110,220,509	CN Loss	586637	p13.3
74	chr1:110,220,509-110,243,644	CN Gain	23136	p13.3
74	chr1:110,243,644-110,482,602	CN Loss	238959	p13.3

74	chr1:110,482,602-114,486,104	CN Gain	4003503	p13.3 - p13.2
74	chr1:114,486,104-114,837,707	CN Loss	351604	p13.2
74	chr1:144,009,053-157,327,309	CN Gain	13318257	q21.1 - q23.1
74	chr1:157,327,309-157,588,437	High Copy Gain	261129	q23.1
74	chr1:157,588,437-249,250,621	CN Gain	91662185	q23.1 - q44
74	chr2:196,831,575-198,635,696	CN Loss	1804122	q32.3 - q33.1
74	chr2:204,701,555-205,001,007	CN Loss	299453	q33.2 - q33.3
74	chr3:0-98,851,430	CN Loss	98851431	p26.3 - q12.1
74	chr3:145,714,628-146,062,918	CN Loss	348291	q24
74	chr4:40,186,491-40,501,675	CN Loss	315185	p14
74	chr6:70,533,447-74,244,361	CN Loss	3710915	q13
74	chr6:75,154,977-76,780,574	CN Gain	1625598	q13 - q14.1
74	chr6:98,034,825-138,002,419	CN Loss	39967595	q16.1 - q23.3
74	chr6:138,002,419-138,274,403	Homozygous Copy Loss	271985	q23.3
74	chr6:138,274,403-142,001,049	CN Loss	3726647	q23.3 - q24.1
74	chr6:142,001,049-142,552,061	Homozygous Copy Loss	551013	q24.1
74	chr6:143,015,461-143,353,847	CN Loss	338387	q24.2
74	chr6:153,859,319-162,757,491	CN Loss	8898173	q25.2 - q26
74	chr7:0-51,590,934	CN Loss	51590935	p22.3 - p12.1
74	chr7:61,064,518-159,138,663	CN Gain	98074146	q11.1 - q36.3
74	chr8:0-146,364,022	CN Loss	146364023	p23.3 - q24.3
74	chr9:0-21,891,986	CN Gain	21891987	p24.3 - p21.3
74	chr9:0-37,365,379	CNN-LOH	37365380	p24.3 - p13.2
74	chr9:21,891,986-22,012,492	Homozygous Copy Loss	120507	p21.3
74	chr9:22,012,492-34,301,995	CN Gain	12289504	p21.3 - p13.3
74	chr9:35,926,415-39,184,065	CN Gain	3257651	p13.3 - p13.1
74	chr9:70,984,372-141,213,431	CN Loss	70229060	q21.11 - q34.3
74	chr10:0-32,948,751	CN Loss	32948752	p15.3 - p11.22
74	chr10:32,948,751-33,476,293	Homozygous Copy Loss	527543	p11.22
74	chr10:33,476,293-35,080,290	CN Loss	1603998	p11.22 - p11.21
74	chr10:35,064,740-63,149,124	CNN-LOH	28084385	p11.21 - q21.2
74	chr10:42,413,322-135,534,747	CN Gain	93121426	q11.21 - q26.3
74	chr11:90,512,808-91,174,005	CN Loss	661198	q14.3
74	chr12:11,136,977-12,842,147	CN Loss	1705171	p13.2 - p13.1
74	chr12:1-133,851,895	CNN-LOH	133851895	p13.33 - q24.33
74	chr13:19,084,823-60,558,729	CN Gain	41473907	q11 - q21.2
74	chr13:60,558,729-61,306,343	High Copy Gain	747615	q21.2
74	chr13:61,306,343-79,514,951	CN Gain	18208609	q21.2 - q31.1
74	chr13:56,412,495-100,637,717	CNN-LOH	44225223	q21.1 - q32.3
74	chr13:79,514,951-80,144,014	High Copy Gain	629064	q31.1
74	chr13:80,144,014-101,023,528	CN Gain	20879515	q31.1 - q32.3

74	chr13:101,023,528-104,011,634	CN Loss	2988107	q32.3 - q33.1
74	chr13:104,011,634-106,387,934	CN Gain	2376301	q33.1 - q33.2
74	chr13:106,387,934-107,320,308	CN Loss	932375	q33.2 - q33.3
74	chr13:107,320,308-107,678,410	CN Gain	358103	q33.3
74	chr13:107,678,410-111,789,281	CN Loss	4110872	q33.3 - q34
74	chr13:111,789,281-115,169,878	CN Gain	3380598	q34
74	chr14:20,219,083-107,349,540	CN Gain	87130458	q11.2 - q32.33
74	chr15:89,780,710-90,086,819	CN Loss	306110	q26.1
74	chr16:0-90,354,753	CN Gain	90354754	p13.3 - q24.3
74	chr17:0-21,603,693	CN Loss	21603694	p13.3 - p11.2
74	chr17:27,941,137-29,200,720	CN Loss	1259584	q11.2
74	chr17:42,446,027-44,002,799	CN Loss	1556773	q21.31
74	chr18:18,554,307-27,624,058	CN Loss	9069752	q11.1 - q12.1
74	chr18:67,752,845-69,712,964	CN Loss	1960120	q22.2 - q22.3
74	chr18:69,712,964-78,077,248	CN Gain	8364285	q22.3 - q23
74	chr19:0-1,583,231	CN Loss	1583232	p13.3
74	chr19:8,510,720-12,995,553	CN Loss	4484834	p13.2
74	chr19:22,589,586-24,544,320	CN Loss	1954735	p12 - p11
74	chr19:30,364,057-30,940,077	CN Loss	576021	q12
74	chr19:51,553,554-52,897,689	CN Loss	1344136	q13.41
74	chr20:0-63,025,520	CN Gain	63025521	p13 - q13.33
74	chr21:14,344,537-48,129,895	CN Gain	33785359	q11.2 - q22.3
74	chr22:49,725,286-50,454,440	CN Gain	729155	q13.33
74	chrX:0-15,609,078	CN Gain	15609079	p22.33 - p22.2
74	chrX:25,693,457-31,231,247	CN Gain	5537791	p21.3 - p21.2
74	chrX:38,464,767-45,884,910	CN Gain	7420144	p11.4 - p11.3
74	chrX:47,041,752-155,270,560	CN Loss	108228809	p11.23 - q28
25	chr1:0-168,019,990	CN Loss	168019991	p36.33 - q24.2
25	chr1:172,085,453-189,163,409	CN Loss	17077957	q24.3 - q31.1
25	chr1:190,282,598-191,369,857	CN Loss	1087260	q31.1 - q31.2
25	chr2:0-55,546,833	CN Loss	55546834	p25.3 - p16.1
25	chr2:60,251,230-60,497,414	CN Gain	246185	p16.1
25	chr2:60,497,414-61,088,534	High Copy Gain	591121	p16.1
25	chr2:61,088,534-62,624,190	CN Gain	1535657	p16.1 - p15
25	chr2:62,624,190-89,131,881	CN Loss	26507692	p15 - p11.2
25	chr2:89,131,697-89,726,591	Homozygous Copy Loss	594895	p11.2
25	chr2:95,429,197-95,704,804	CN Gain	275608	q11.1
25	chr2:95,704,804-97,157,807	High Copy Gain	1453004	q11.1 - q11.2
25	chr2:97,157,807-97,889,931	CN Gain	732125	q11.2
25	chr2:97,889,931-243,199,373	CN Loss	145309443	q11.2 - q37.3
25	chr3:0-198,022,430	CN Loss	198022431	p26.3 - q29

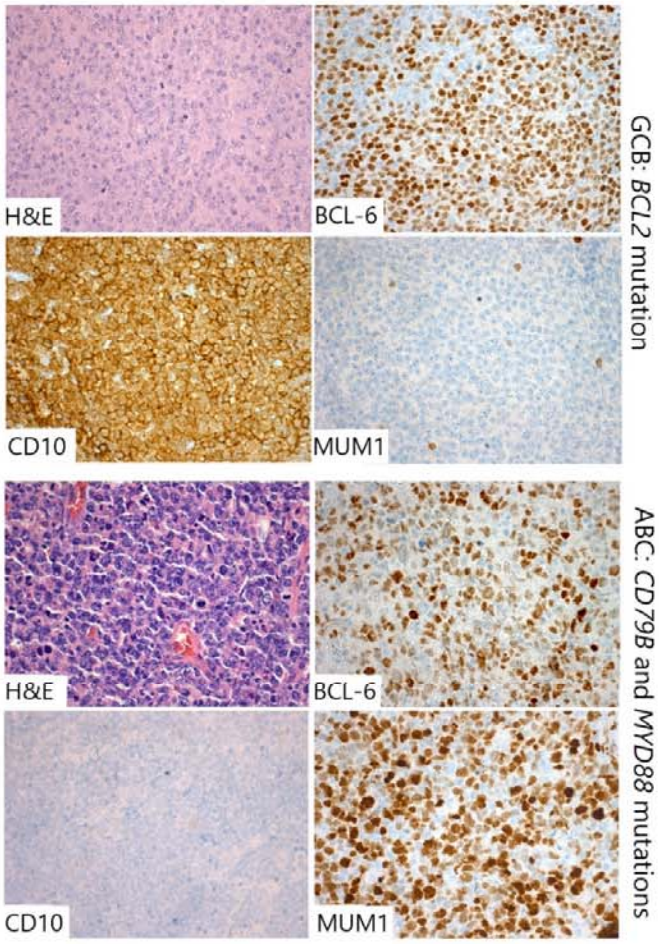
25	chr5:89,461,845-109,523,469	CN Loss	20061625	q14.3 - q21.3
25	chr6:0-21,522,087	CN Gain	21522088	p25.3 - p22.3
25	chr6:0-21,667,970	CNN-LOH	21667971	p25.3 - p22.3
25	chr6:21,645,094-171,115,067	CN Loss	149469974	p22.3 - q27
25	chr8:0-71,296,348	CN Loss	71296349	p23.3 - q13.3
25	chr10:0-135,534,747	CN Loss	135534748	p15.3 - q26.3
25	chr13:19,084,823-115,169,878	CN Loss	96085056	q11 - q34
25	chr15:35,851,265-46,176,625	CN Loss	10325361	q14 - q21.1
25	chr15:67,113,781-102,531,392	CN Loss	35417612	q22.31 - q26.3
25	chr18:60,819,803-78,077,248	CN Gain	17257446	q21.33 - q23
25	chr20:1-63,025,520	CN Loss	63025520	p13 - q13.33
26	chr2:229,180,825-243,052,331	CN Gain	13871507	q36.3 - q37.3
26	chr3:48,313,418-50,406,058	CN Loss	2092641	p21.31
26	chr3:52,409,421-54,033,786	CN Loss	1624366	p21.1
26	chr5:38,139-86,034,505	CN Gain	85996367	p15.33 - q14.3
26	chr7:82,444,738-159,118,443	CN Gain	76673706	q21.11 - q36.3
26	chr9:204,738-141,054,761	CN Gain	140850024	p24.3 - q34.3
26	chr11:192,764-49,173,331	High Copy Gain	48980568	p15.5 - p11.12
26	chr11:45,710,652-51,575,951	CNN-LOH	5865300	p11.2 - p11.12
26	chr11:49,177,919-51,575,951	CN Gain	2398033	p11.12
26	chr12:1-133,851,895	CN Gain	133851895	p13.33 - q24.33
26	chr15:41,040,181-42,955,967	CN Loss	1915787	q15.1 - q15.2
26	chr15:75,736,452-78,894,339	CN Loss	3157888	q24.2 - q25.1
26	chr17:400,959-3,730,979	CN Gain	3330021	p13.3 - p13.2
26	chr17:3,745,359-4,198,650	Homozygous Copy Loss	453292	p13.2
26	chr17:4,212,108-5,412,822	CN Loss	1200715	p13.2
26	chr17:5,427,115-80,263,427	CN Gain	74836313	p13.2 - q25.3
26	chr18:12,842-78,007,784	CN Gain	77994943	p11.32 - q23
26	chr19:19,427,623-23,050,838	High Copy Gain	3623216	p13.11 - p12
26	chr19:27,754,573-30,282,649	High Copy Gain	2528077	q11 - q12
26	chr19:39,369,986-41,368,655	High Copy Gain	1998670	q13.2
26	chr19:41,368,677-41,614,028	CN Gain	245352	q13.2
26	chr21:14,344,537-48,097,610	CN Gain	33753074	q11.2 - q22.3
26	chrX:177,942-55,600,744	CN Loss	55422803	p22.33 - p11.21
26	chrX:55,623,725-64,926,522	CN Gain	9302798	p11.21 - q12
26	chrX:64,932,776-155,219,364	CN Loss	90286589	q12 - q28

Case 25 has in addition a *BCL2* rearrangement

Case 26 has in addition a *BCL2* and a *BCL6* rearrangement

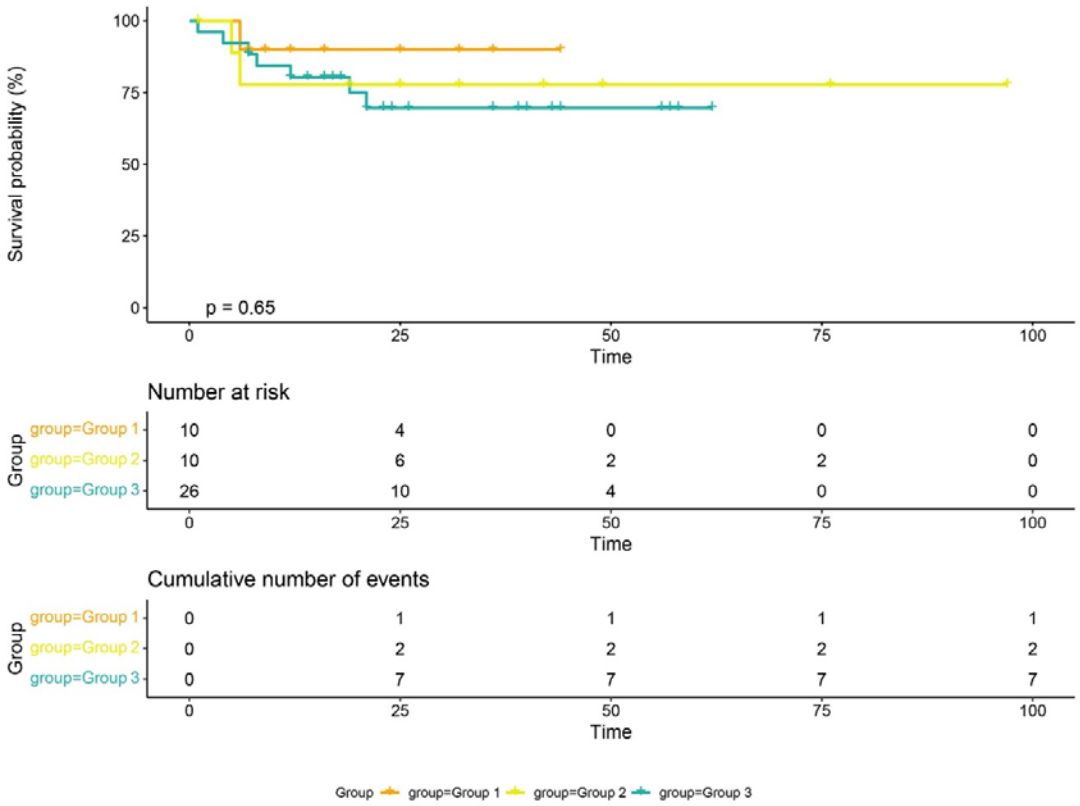
Supplemental Figure 1: Control group

Case	Age at diagnosis	Localization	Type Hans	Mutations	GEP COO*	FISH
CoGCB1	71	spleen	GCB	*PIM1, TNFAIP3, EZH2*	GCB	None
CoGCB2	76	LN cervical	GCB	*BCL2*	GCB	*BCL2*
CoGCB3	74	acromion	GCB	*BCL2*	GCB	*BCL2*
CoGCB4	64	LN cervical	GCB	*BCL2, EZH2*	GCB	*BCL2, MYC*
CoGCB5	68	LN cervical	GCB	*BCL2*	GCB	*MYC*
CoABC1	77	testis	ABC	*MYD88, CARD11, PIM1*	ABC	None
CoABC2	76	testis	ABC	*MYD88, PIM1*	ABC	None
CoABC3	74	ENT	ABC	*MYD88, PRDM1, PIM1*	ABC	None
CoABC4	87	LN cervical	ABC	*MYD88, CD79B*	ABC	None



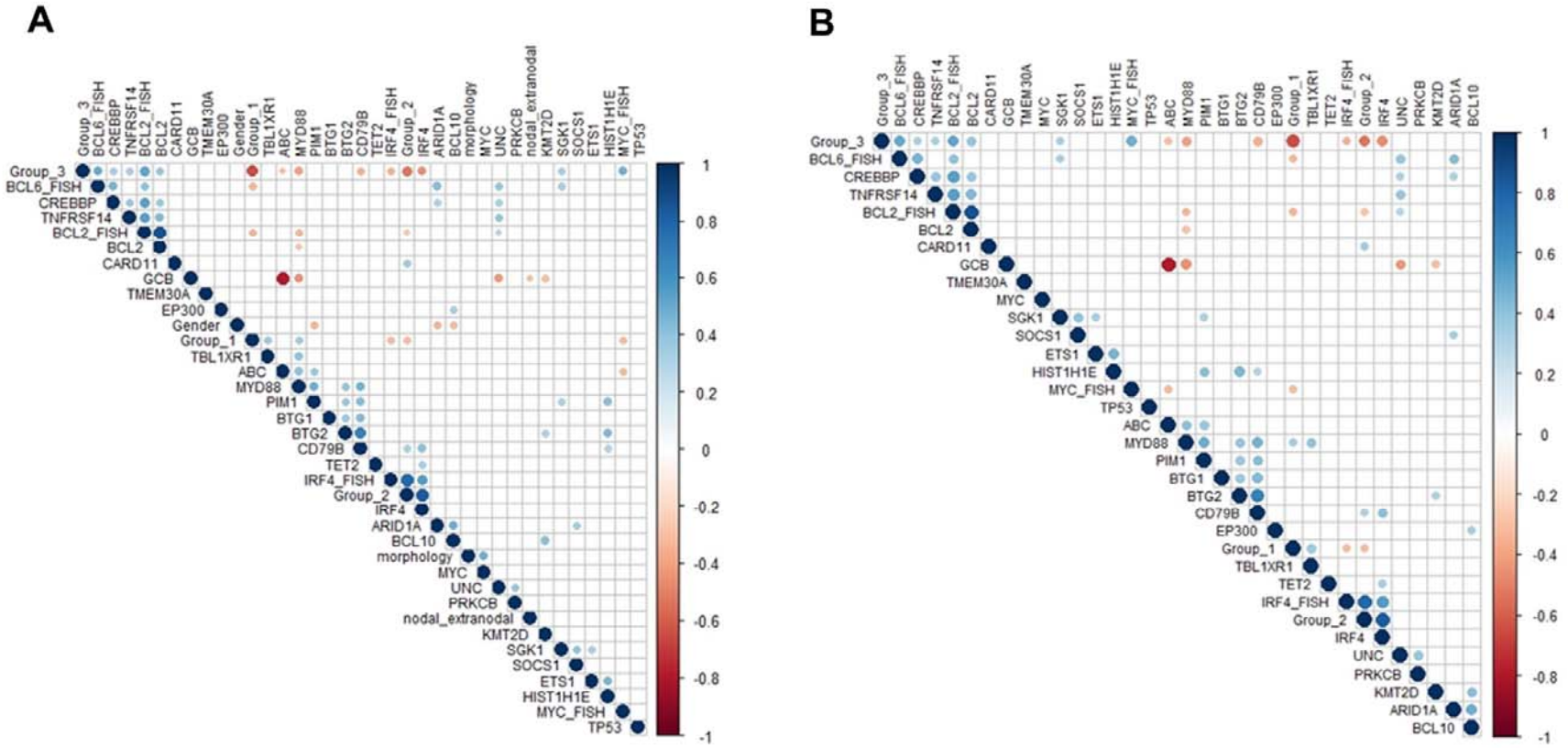
GEP: gene expression profile, FISH fluorescence in situ hybridization; GCB: germinal center B-cell; ABC: Activated B-cell; COO: cell of origin Co: Control.

Supplemental Figure 2. Overall survival analysis of 46 cases of DLBCL-AE.
Survival analysis (Kaplan Meier estimator) or DLBCL-AE in adults divided by FISH group 1-3. The difference in the overall survival in not significant (P=0.065). Below, the risk table with patients at risk and cumulative events per group. Group 1, DLBCL-AE without rearrangements, Group 2, DLBCL-AE-*IRF4* and Group 3: DLBCL-AE with *BCL2/BCL6/MYC*/IGH rearrangements. Survival analysis and plotting was performed with R version 4.0.5 (R Core Team, 2021) using Survminer package (Kassambara A., 2021)



Supplemental Figure 3. Correlation analysis of clinical and/or molecular features in 50 cases of DLBCL-AE

A) Correlation analysis including cluster groups, clinical and pathological features (age, male gender, morphology, extranodal involvement), COO, genetic rearrangements and mutations in more than 4 cases. **B)** Correlation analysis including cluster groups, COO, genetic rearrangements and mutations in more than 4 cases.



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