Table S1. The list of 409 targeted genes

ABL1	AURKC	BTK	CEBPA	DDR2	ERG	FLT1	HLF
ABL2	AXL	BUB1B	CHEK1	DEK	ESR1	FLT3	HNF1A
ACVR2A	BAI3	CARD11	CHEK2	DICER1	ETS1	FLT4	HOOK3
ADAMTS20	BAP1	CASC5	CIC	DNMT3A	ETV1	FN1	HRAS
AFF1	BCL10	CBL	CKS1B	DPYD	ETV4	FOXL2	HSP90AA1
AFF3	BCL11A	CCND1	CMPK1	DST	EXT1	FOXO1	HSP90AB1
AKAP9	BCL11B	CCND2	COL1A1	EGFR	EXT2	FOXO3	ICK
AKT1	BCL2	CCNE1	CRBN	EML4	EZH2	FOXP1	IDH1
AKT2	BCL2L1	CD79A	CREB1	EP300	FAM123B	FOXP4	IDH2
AKT3	BCL2L2	CD79B	CREBBP	EP400	FANCA	FZR1	IGF1R
ALK	BCL3	CDC73	CRKL	EPHA3	FANCC	G6PD	IGF2
APC	BCL6	CDH1	CRTC1	EPHA7	FANCD2	GATA1	IGF2R
AR	BCL9	CDH11	CSF1R	EPHB1	FANCF	GATA2	IKBKB
ARID1A	BCR	CDH2	CSMD3	EPHB4	FANCG	GATA3	IKBKE
ARID2	BIRC2	CDH20	CTNNA1	EPHB6	FAS	GDNF	IKZF1
ARNT	BIRC3	CDH5	CTNNB1	ERBB2	FBXW7	GNA11	IL2
ASXL1	BIRC5	CDK12	CYLD	ERBB3	FGFR1	GNAQ	IL21R
ATF1	BLM	CDK4	CYP2C19	ERBB4	FGFR2	GNAS	IL6ST
ATM	BLNK	CDK6	CYP2D6	ERCC1	FGFR3	GPR124	IL7R
ATR	BMPR1A	CDK8	DAXX	ERCC2	FGFR4	GRM8	ING4
ATRX	BRAF	CDKN2A	DCC	ERCC3	FH	GUCY1A2	IRF4
AURKA	BRD3	CDKN2B	DDB2	ERCC4	FLCN	HCAR1	IRS2
AURKB	BRIP1	CDKN2C	DDIT3	ERCC5	FLI1	HIF1A	ITGA10

ITGA9	MALT1	MTR	NTRK1	PKHD1	RNASEL	SSX1	TPR
ITGB2	MAML2	MTRR	NTRK3	PLAG1	RNF2	STK11	TRIM24
ITGB3	MAP2K1	MUC1	NUMA1	PLCG1	RNF213	STK36	TRIM33
JAK1	MAP2K2	MUTYH	NUP214	PLEKHG5	ROS1	SUFU	TRIP11
JAK2	MAP2K4	MYB	NUP98	PML	RPS6KA2	SYK	TRRAP
JAK3	MAP3K7	MYC	PAK3	PMS1	RRM1	SYNE1	TSC1
JUN	MAPK1	MYCL1	PALB2	PMS2	RUNX1	TAF1	TSC2
KAT6A	MAPK8	MYCN	PARP1	POU5F1	RUNX1T1	TAF1L	TSHR
KAT6B	MARK1	MYD88	PAX3	PPARG	SAMD9	TAL1	UBR5
KDM5C	MARK4	MYH11	PAX5	PPP2R1A	SBDS	TBX22	UGT1A1
KDM6A	MBD1	MYH9	PAX7	PRDM1	SDHA	TCF12	USP9X
KDR	MCL1	NBN	PAX8	PRKAR1A	SDHB	TCF3	VHL
KEAP1	MDM2	NCOA1	PBRM1	PRKDC	SDHC	TCF7L1	WAS
KIT	MDM4	NCOA2	PBX1	PSIP1	SDHD	TCF7L2	WHSC1
KLF6	MEN1	NCOA4	PDE4DIP	PTCH1	SEPT9	TCL1A	WRN
KRAS	MET	NF1	PDGFB	PTEN	SETD2	TET1	WT1
LAMP1	MITF	NF2	PDGFRA	PTGS2	SF3B1	TET2	XPA
LCK	MLH1	NFE2L2	PDGFRB	PTPN11	SGK1	TFE3	XPC
LIFR	MLL	NFKB1	PER1	PTPRD	SH2D1A	TGFBR2	XPO1
LPHN3	MLL2	NFKB2	PGAP3	PTPRT	SMAD2	TGM7	XRCC2
POT1	MLL3	NIN	PHOX2B	RAD50	SMAD4	THBS1	ZNF384
LPP	MLLT10	NKX2-1	PIK3C2B	RAF1	SMARCA4	TIMP3	ZNF521
LRP1B	MMP2	NLRP1	PIK3CA	RALGDS	SMARCB1	TLR4	
LTF	MN1	NOTCH1	PIK3CB	RARA	SMO	TLX1	
LTK	MPL	NOTCH2	PIK3CD	RB1	SMUG1	TNFAIP3	
MAF	MRE11A	NOTCH4	PIK3CG	RECQL4	SOCS1	TNFRSF14	
MAFB	MSH2	NPM1	PIK3R1	REL	SOX11	TNK2	
MAGEA1	MSH6	NRAS	PIK3R2	RET	SOX2	TOP1	
MAGI1	MTOR	NSD1	PIM1	RHOH	SRC	TP53	

This list was obtained from https://www.thermofisher.com/.

Table S2. The list of all the extracted mutations

Sample	Chromosome	Position of the variant	The reference allele	The variant allele	Frequency	Gene	Function	Amino acid change
Case 1	chr5	112137003	G	A	50.2	APC	missense	p.Gly253Ser
Case 1	chr16	3777903	G	A	12.9	CREBBP	missense	p.Ser2382Phe
Case 1	chr16	3900593	G	A	5.5	CREBBP	missense	p.Thr168Met
Case 1	chr18	50936977	G	A	8.3	DCC	missense	p.Gly1031Arg
Case 1	chr12	132504671	C	T	45.2	EP400	missense	p.Thr1452Met
Case 1	chr16	89866018	A	G	46.9	FANCA	missense	p.Leu274Pro
Case 1	chr17	59871079	G	A	44.7	FANCJ	missense	p.Ala451Val
Case 1	chr4	1808286	G	A	72.2	FGFR3	missense	p.Val684Ile
Case 1	chr3	128202753	G	A	63.8	GATA2	missense	p.His323Tyr
Case 1	chr5	55256361	C	T	11.9	IL6ST	missense	p.Arg281Gln
Case 1	chr1	145538732	C	T	45.7	ITGA10	missense	p.Thr948Ile
Case 1	chr21	46309959	C	T	5.6	ITGB2	missense	p.Gly531Arg
Case 1	chr2	141597608	C	T	9.5	LRP1B	missense	p.Asp1721Asn
Case 1	chr18	56338948	C	T	21.1	MALT1	missense	p.Pro25Ser
Case 1	chr22	28193275	G	A	5.6	MN1	missense	p.Pro1086Leu
Case 1	chr1	11298662	G	A	6.7	MTOR	missense	p.Thr600Ile
Case 1	chr6	32169964	G	A	6.5	NOTCH4	missense	p.Pro1215Leu
Case 1	chr5	176666865	A	G	5.5	NSD1	missense	p.Lys1434Arg
Case 1	chr8	48713488	T	C	51.2	PRKDC	missense	p.Ile3327Val

Case 1	chr13	48878062	C	A	15	RB1	missense	p.Thr5Asn
Case 1	chr6	117674237	C	T	5.4	ROS1	missense	p.Gly1413Arg
Case 1	chr7	92733187	C	G	50.6	SAMD9	missense	p.Gly742Arg
Case 1	chr18	45375016	G	A	5.7	SMAD2	missense	p.Ser276Leu
Case 1	chr19	11136125	A	G	16.3	SMARCA4	missense	p.Asn1037Asp
Case 1	chr9	32630132	C	T	5.2	TAF1L	missense	p.Ala1816Thr
Case 1	chr9	32632574	C	G	60.4	TAF1L	missense	p.Ala1002Pro
Case 1	chr4	106164036	-	T	11.3	TET2	frameshiftInsertion	p.Thr1183fs
Case 1	chr4	106180795	G	C	11.4	TET2	missense	p.Gly1275Arg
Case 1	chr15	39884882	G	T	38.1	THBS1	missense	p.Gln882His
Case 1	chr1	2488139	G	A	18.6	TNFRSF14	nonsense	p.Trp12Ter
Case 1	chr7	98552753	G	A	6.2	TRRAP	missense	p.Met1914Ile
Case 2	chr7	2983994	C	T	9.3	CARD11	missense	p.Arg179Gln
Case 2	chr18	50936977	G	A	12.2	DCC	missense	p.Gly1031Arg
Case 2	chr12	132490674	G	C	51.2	EP400	missense	p.Gly985Arg
Case 2	chr13	103527850	G	A	5.9	ERCC5	missense	p.Gly1053Glu
Case 2	chr11	44193279	A	G	8.6	EXT2	missense	p.Asp464Gly
Case 2	chr4	1808286	G	A	24.5	FGFR3	missense	p.Val684Ile
Case 2	chr6	41562611	G	A	9.4	FOXP4	missense	p.Ala514Thr
Case 2	chr3	128202753	G	A	43.6	GATA2	missense	p.His323Tyr
Case 2	chr1	144876017	T	C	49.1	PDE4DIP	missense	p.Ser1555Gly
Case 2	chr1	144918954	A	G	25.3	PDE4DIP	missense	p.Leu411Ser
Case 2	chr17	8048284	C	A	5.5	PER1	missense	p.Gly749Val

Case 2	chr9	32632574	C	G	82.9	TAF1L	missense	p.Ala1002Pro
Case 2	chr4	106196561	C	T	10.2	TET2	nonsense	p.Gln1632Ter
Case 2	chr4	106197287	G	-	10.2	TET2	frameshiftDeletion	p.Ter2003fs
Case 2	chr15	39884882	G	T	28.4	THBS1	missense	p.Gln882His
Case 2	chr1	2488105	T	C	21.4	TNFRSF14	missense	p.Met1Thr
Case 3	chr1	179077148	C	T	44.9	ABL2	missense	p.Ser1070Asn
Case 3	chr3	142217614	C	T	22.6	ATR	missense	p.Gly1795Arg
Case 3	chr3	187442856	A	G	8.4	BCL6	missense	p.Leu617Pro
Case 3	chr6	56365901	C	T	6.4	DST	missense	p.Glu4506Lys
Case 3	chr12	132547092	A	-	90.6	EP400	frameshiftDeletion	p.Gln2727fs
Case 3	chr16	14041882	C	T	47.5	ERCC4	missense	p.Ala810Val
Case 3	chr11	22647355	A	G	54.1	FANCF	missense	p.Met1Thr
Case 3	chr4	1808286	G	A	58	FGFR3	missense	p.Val684Ile
Case 3	chr2	216293009	C	T	5.1	FN1	nonsense	p.Trp246Ter
Case 3	chr3	128202753	G	A	35.8	GATA2	missense	p.His323Tyr
Case 3	chr10	76735581	C	-	59	KAT6B	frameshiftDeletion	p.Pro497fs
Case 3	chr2	142567929	G	A	6.1	LRP1B	missense	p.His42Tyr
Case 3	chr3	37053562	C	T	37.8	MLH1	missense	p.Arg217Cys
Case 3	chr12	49420390	C	T	48.2	MLL2	missense	p.Arg5120His
Case 3	chr16	15814855	C	T	18.2	MYH11	missense	p.Met1551Ile
Case 3	chr17	8049779	T	G	51.3	PER1	missense	p.Lys650Thr
Case 3	chr15	74335421	C	T	12.3	PML	missense	p.Ala601Val
Case 3	chr13	49030375	G	A	8.5	RB1	missense	p.Gly617Asp

Case 3	chr3	47125452	T	C	50.6	SETD2	missense	p.Ser1940Gly
Case 3	chr6	152461140	C	T	50.8	SYNE1	missense	p.Arg8468His
Case 3	chr6	152658141	CT	AC	53.3	SYNE1	missense	p.Lys4121Ser
Case 3	chr9	32630473	T	C	6.5	TAF1L	missense	p.Lys1702Arg
Case 3	chr9	32632436	C	T	8.5	TAF1L	missense	p.Val1048Met
Case 3	chr9	32632574	C	G	40.8	TAF1L	missense	p.Ala1002Pro
Case 3	chr19	1625665	G	A	38.7	TCF3	missense	p.Pro137Ser
Case 3	chr4	106164896	-	A	11.7	TET2	frameshiftInsertion	p.Tyr1255fs
Case 3	chr4	106197392	G	T	12.3	TET2	nonsense	p.Glu1909Ter
Case 3	chr15	39884882	G	T	17.7	THBS1	missense	p.Gln882His
Case 3	chr1	2488104	A	C	9.9	TNFRSF14	missense	p.Met1Leu
Case 4	chr5	112137003	G	A	49.8	APC	missense	p.Gly253Ser
Case 4	chr18	60985780	CG	-	93.2	BCL2	frameshiftDeletion	p.Pro40fs
Case 4	chr18	50936977	G	A	12.7	DCC	missense	p.Gly1031Arg
Case 4	chr7	142564665	A	C	47.4	EPHB6	missense	p.Glu530Ala
Case 4	chr3	10108987	A	C	63.6	FANCD2	missense	p.Glu827Ala
Case 4	chr10	90773895	T	G	35.6	FAS	nonsense	p.Tyr232Ter
Case 4	chr4	1808286	G	A	45.1	FGFR3	missense	p.Val684Ile
Case 4	chr3	128202753	G	A	67.4	GATA2	missense	p.His323Tyr
Case 4	chr19	17937619	C	T	50.9	JAK3	missense	p.Arg1103Gln
Case 4	chr12	25378562	C	T	33	KRAS	missense	p.Ala146Thr
Case 4	chr1	32740633	A	G	48.3	LCK	missense	p.His76Arg
Case 4	chr22	28195673	T	G	5.8	MN1	missense	p.Lys287Gln

Case 4	chr2	16085918	C	A	5	MYCN	missense	p.Pro365Gln
Case 4	chr10	104157127	-	G	22	NFKB2	frameshiftInsertion	p.Gln155fs
Case 4	chr1	144854656	C	T	11.3	PDE4DIP	missense	p.Gly2272Arg
Case 4	chr1	6528564	C	T	72.8	PLEKHG5	missense	p.Gly847Ser
Case 4	chr17	78262109	C	T	43.4	RNF213	missense	p.Pro253Ser
Case 4	chr17	78316961	G	A	52.7	RNF213	missense	p.Asp2007Asn
Case 4	chr6	134493802	A	C	19.5	SGK1	nonsense	p.Tyr315Ter
Case 4	chr6	152623087	C	A	22.4	SYNE1	nonsense	p.Glu5820Ter
Case 4	chr9	32632574	C	G	50.4	TAF1L	missense	p.Ala1002Pro
Case 4	chr10	70332168	-	A	5.8	TET1	frameshiftInsertion	p.Ser25fs
Case 4	chr4	106180867	A	C	17.8	TET2	missense	p.Lys1299Gln
Case 4	chr15	39884882	G	T	27.9	THBS1	missense	p.Gln882His
Case 8	chr1	27057772	C	A	11.4	ARID1A	missense	p.Pro494Thr
Case 8	chr11	102220760	G	-	75.9	BIRC2	frameshiftdeletion	p.Val11fs
Case 8	chr15	40476075	G	T	46.4	BUB1B	missense	p.Ala248Ser
Case 8	chr16	3781328	GGA	-	5.9	CREBBP	nonframeshiftdeletion	p.Ser1680del
Case 8	chr18	50936977	G	A	12.8	DCC	missense	p.Gly1031Arg
Case 8	chr1	98187224	A	T	40	DPYD	missense	p.Tyr109Asn
Case 8	chr6	56382365	TT	-	91.8	DST	frameshiftdeletion	p.Lys3942fs
Case 8	chr4	1808286	G	A	40.9	FGFR3	missense	p.Val684Ile
Case 8	chr3	128202753	G	A	56.1	GATA2	missense	p.His323Tyr
Case 8	chr3	128205139	C	G	5.7	GATA2	missense	p.Gly101Ala
Case 8	chr3	65425561	-	CTG	38	MAGI1	nonframeshiftinsertion	p.Gln421delinsHisArg

Case 8	chr7	151945072	-	T	33.6	MLL3	nonsense	p.Tyr816Ter
Case 8	chr10	21962410	G	A	51.1	MLLT10	missense	p.Ala395Thr
Case 8	chr11	3697525	G	A	7.9	NUP98	missense	p.Pro1756Leu
Case 8	chr11	3723812	GC	-	94.7	NUP98	frameshiftdeletion	p.Gly1131fs
Case 8	chr8	48701555	T	-	88.2	PRKDC	frameshiftdeletion	p.Asn3604fs
Case 8	chr9	32632541	C	T	20	TAF1L	missense	p.Asp1013Asn
Case 8	chr9	32632574	C	G	78.7	TAF1L	missense	p.Ala1002Pro
Case 8	chr1	47685570	C	-	87	TAL1	frameshiftdeletion	p.Gly273fs
Case 8	chr10	114925317	A	-	85.7	TCF7L2	frameshiftdeletion	p.Lys468fs
Case 8	chr15	39884882	G	T	38.5	THBS1	missense	p.Gln882His
Case 8	chr22	33253291	C	-	37.1	TIMP3	frameshiftdeletion	p.Glu88fs
Case 8	chr7	98547761	C	T	49.5	TRRAP	missense	p.Thr1730Ile
Case 8	chr7	152346220	A	-	87.6	XRCC2	frameshiftdeletion	p.Leu117fs
Case 9	chr9	133760142	-	C	15.6	ABL1	frameshiftinsertion	p.Thr842fs
Case 9	chr5	112177171	-	A	53	APC	frameshiftinsertion	p.Val1961fs
Case 9	chr1	27101474	-	C	16.7	ARID1A	frameshiftinsertion	p.Ser1587fs
Case 9	chr1	27101622	-	C	12.4	ARID1A	frameshiftinsertion	p.Arg1636fs
Case 9	chr11	108142042	C	T	43.7	ATM	missense	p.His996Tyr
Case 9	chr3	142272108	-	A	5.8	ATR	frameshiftinsertion	p.Gln923fs
Case 9	chr6	69349039	-	T	43.4	BAI3	frameshiftinsertion	p.Leu158fs
Case 9	chr2	60773124	T	G	12.3	BCL11A	missense	p.Lys123Gln
Case 9	chr18	60985641	T	C	21.2	BCL2	missense	p.Ser87Gly
Case 9	chr19	45262747	T	C	8.7	BCL3	missense	p.Phe414Leu

Case 9	chr11	102220760	G	-	75.3	BIRC2	frameshiftdeletion	p.Val11fs
Case 9	chr18	50936977	G	A	9.6	DCC	missense	p.Gly1031Arg
Case 9	chr3	134670694	A	T	18.2	EPHB1	missense	p.Asn202Ile
Case 9	chr13	103527850	G	A	14.8	ERCC5	missense	p.Gly1053Glu
Case 9	chr7	148508727	T	A	20	EZH2	missense	p.Tyr646Phe
Case 9	chr7	148508727	T	A	20	EZH2	missense	p.Tyr646Phe
Case 9	chr9	35078303	-	C	81.4	FANCG	frameshiftinsertion	p.Gln116fs
Case 9	chr10	123247581	T	G	9.3	FGFR2	missense	p.Asn638Thr
Case 9	chr4	1806194	-	C	67.8	FGFR3	frameshiftinsertion	p.Gly407fs
Case 9	chr4	1808286	G	A	54.1	FGFR3	missense	p.Val684Ile
Case 9	chr3	128202753	G	A	61.7	GATA2	missense	p.His323Tyr
Case 9	chr8	37693120	-	C	50	GPR124	frameshiftinsertion	p.Ser628fs
Case 9	chr6	52874266	G	T	49	ICK	missense	p.Thr531Lys
Case 9	chr2	209108211	T	G	5.5	IDH1	missense	p.Asn213Thr
Case 9	chr11	2154309	C	T	5.4	IGF2	missense	p.Glu151Lys
Case 9	chr1	145527961	-	G	64.4	ITGA10	frameshiftinsertion	p.Asp68fs
Case 9	chr13	113965177	G	A	5	LAMP1	missense	p.Arg186Gln
Case 9	chr13	113976641	G	A	51.2	LAMP1	missense	p.Ala387Thr
Case 9	chr4	62845389	G	C	8.2	LPHN3	missense	p.Gly904Arg
Case 9	chr3	65425561	-	CTG	83.9	MAGI1	nonframeshiftinsertion	p.Gln421delinsHisArg
Case 9	chr12	69233231	-	A	14.4	MDM2	frameshiftinsertion	p.Pro366fs
Case 9	chr12	49436110	C	-	12.3	MLL2	frameshiftdeletion	p.Glu1957fs
Case 9	chr7	151945072	-	T	34.9	MLL3	nonsense	p.Tyr816Ter

Case 9	chr2	48027797	-	A	28.9	MSH6	frameshiftinsertion	p.Leu893fs
Case 9	chr2	48030636	-	C	7.1	MSH6	frameshiftinsertion	p.Asp1084fs
Case 9	chr2	16085908	-	C	6.1	MYCN	frameshiftinsertion	p.Val362fs
Case 9	chr6	32169109	-	G	7.4	NOTCH4	frameshiftinsertion	p.Leu1308fs
Case 9	chr1	156830868	-	C	81	NTRK1	frameshiftinsertion	p.Leu48fs
Case 9	chr11	71725083	A	G	52.9	NUMA1	missense	p.Ser1156Pro
Case 9	chr1	226570840	-	C	61.5	PARP1	frameshiftinsertion	p.Gln353fs
Case 9	chr1	226570877	-	A	5	PARP1	frameshiftinsertion	p.Arg340fs
Case 9	chr2	223161749	T	A	5.3	PAX3	missense	p.Tyr90Phe
Case 9	chr1	204397321	G	A	55.7	PIK3C2B	missense	p.Pro1476Ser
Case 9	chr1	9780848	T	A	8.6	PIK3CD	missense	p.Tyr524Asn
Case 9	chr6	51613007	C	T	7.1	PKHD1	missense	p.Ser3136Asn
Case 9	chr1	6528102	C	-	35.3	PLEKHG5	frameshiftdeletion	p.Ala1001fs
Case 9	chr7	6027047	T	C	6.3	PMS2	missense	p.Lys450Arg
Case 9	chr8	48689487	-	T	8.8	PRKDC	frameshiftinsertion	p.Ala4033fs
Case 9	chr9	8518143	-	C	43.6	PTPRD	frameshiftinsertion	p.Pro417fs
Case 9	chr3	12647708	-	A	25.4	RAF1	frameshiftinsertion	p.Met224fs
Case 9	chr6	134491510	-	G	50	SGK1	frameshiftinsertion	p.Ile493fs
Case 9	chr19	11097621	-	C	51	SMARCA4	frameshiftinsertion	p.Val268fs
Case 9	chr9	32632574	C	G	71.6	TAF1L	missense	p.Ala1002Pro
Case 9	chr4	106157006	T	C	45.7	TET2	missense	p.Val636Ala
Case 9	chr15	39884882	G	T	36.8	THBS1	missense	p.Gln882His
Case 9	chr1	2489787	C	T	17.5	TNFRSF14	missense	p.Arg62Cys

Case 10	chr9	133755998	G	A	6	ABL1	missense	p.Arg561Lys
Case 10	chr9	133760827	G	A	6.6	ABL1	missense	p.Met1069Ile
Case 10	chr9	133760841	C	T	7.7	ABL1	missense	p.Ala1074Val
Case 10	chr12	43763127	G	A	5	ADAMTS20	missense	p.Ala1835Val
Case 10	chr12	43763145	G	A	5.9	ADAMTS20	missense	p.Ala1829Val
Case 10	chr12	43833482	C	T	5.4	ADAMTS20	missense	p.Asp846Asn
Case 10	chr7	91724341	G	A	6	AKAP9	missense	p.Glu3195Lys
Case 10	chr14	105243058	G	C	51.2	AKT1	missense	p.Ile75Met
Case 10	chr5	112155005	G	T	50.8	APC	missense	p.Ala426Ser
Case 10	chr1	27023462	G	A	55.5	ARID1A	missense	p.Gly190Arg
Case 10	chr1	150784520	T	C	50.8	ARNT	missense	p.Met783Val
Case 10	chr3	142215931	C	T	5.4	ATR	missense	p.Glu1888Lys
Case 10	chrX	76931720	C	T	5.1	ATRX	splicing	
Case 10	chrX	76937987	C	T	6	ATRX	missense	p.Val921Ile
Case 10	chr20	54956490	G	A	5.7	AURKA	missense	p.Thr235Ile
Case 10	chr2	60688069	G	A	24.6	BCL11A	missense	p.Leu660Phe
Case 10	chr18	60985780	CG	-	90	BCL2	frameshiftdeletion	p.Pro40fs
Case 10	chr11	102220760	G	-	85	BIRC2	frameshiftdeletion	p.Val11fs
Case 10	chr15	91293024	C	T	5.9	BLM	missense	p.His176Tyr
Case 10	chr15	91346775	C	T	6.6	BLM	missense	p.Ser1128Leu
Case 10	chr7	2963978	G	A	5.3	CARD11	missense	p.Ser610Phe
Case 10	chr1	193117048	G	A	5.2	CDC73	missense	p.Glu261Lys
Case 10	chr16	66432423	TC	CT	46.9	CDH5	nonframeshiftsubstitution	p.Ile517Thr

Case 10	chr11	125513729	C	T	6.1	CHEK1	missense	p.Ser286Phe
Case 10	chr16	3777903	G	A	13.5	CREBBP	missense	p.Ser2382Phe
Case 10	chr6	33288921	C	T	5.7	DAXX	missense	p.Asp223Asn
Case 10	chr18	50734155	C	A	40.9	DCC	missense	p.Thr610Asn
Case 10	chr18	50961543	G	A	5.6	DCC	missense	p.Val1065Ile
Case 10	chr6	56382365	T	-	91.2	DST	frameshiftdeletion	p.Lys3942fs
Case 10	chr6	56417854	C	T	5.5	DST	missense	p.Glu3127Lys
Case 10	chr12	132547092	A	-	92.9	EP400	frameshiftdeletion	p.Gln2727fs
Case 10	chr17	37883194	C	T	5.1	ERBB2	missense	p.Pro1033Ser
Case 10	chr2	212288955	C	T	6.1	ERBB4	missense	p.Asp931Asn
Case 10	chr4	1803738	G	A	5	FGFR3	missense	p.Val306Ile
Case 10	chr4	1808286	G	A	76.9	FGFR3	missense	p.Val684Ile
Case 10	chr1	241665750	G	A	6.4	FH	missense	p.Pro410Leu
Case 10	chr13	29005306	A	G	42.9	FLT1	missense	p.Phe319Leu
Case 10	chr2	216293009	C	T	5	FN1	nonsense	p.Trp246Ter
Case 10	chr3	71101690	C	T	11	FOXP1	missense	p.Glu70Lys
Case 10	chr3	128202753	G	A	33.1	GATA2	missense	p.His323Tyr
Case 10	chr12	121434363	C	T	5	HNF1A	missense	p.Pro376Leu
Case 10	chr11	2154440	C	T	5.2	IGF2	missense	p.Arg163Lys
Case 10	chr6	160482574	C	T	5	IGF2R	missense	p.Thr1101Ile
Case 10	chr5	55252018	C	T	8.2	IL6ST	missense	p.Val368Met
Case 10	chr9	5126772	G	A	6.9	JAK2	missense	p.Arg1127Lys
Case 10	chr10	76781840	G	A	7.3	KAT6B	missense	p.Glu1075Lys

Case 10	chrX	44966717	G	A	5.1	KDM6A	missense	p.Gly1314Glu
Case 10	chr4	55570043	A	G	61.2	KIT	missense	p.Thr304Ala
Case 10	chr5	38489186	C	T	7	LIFR	missense	p.Glu777Lys
Case 10	chr2	141946006	C	T	5.7	LRP1B	missense	p.Val333Ile
Case 10	chr2	142567929	G	A	10.5	LRP1B	missense	p.His42Tyr
Case 10	chr3	65425561	-	CTG	78	MAGI1	nonframeshiftinsertion	p.Gln421delinsHisArg
Case 10	chr19	4090618	G	A	8	MAP2K2	missense	p.Thr394Ile
Case 10	chr6	91226369	C	T	5.8	MAP3K7	missense	p.Glu558Lys
Case 10	chr1	220831142	G	A	14	MARK1	missense	p.Glu667Lys
Case 10	chr1	220831177	G	A	38.9	MARK1	splicing	
Case 10	chr12	49425524	G	A	8.3	MLL2	nonsense	p.Gln4322Ter
Case 10	chr12	49444366	G	A	6.2	MLL2	missense	p.Pro1002Leu
Case 10	chr12	49445068	G	A	30.5	MLL2	nonsense	p.Gln800Ter
Case 10	chr12	49445613	G	A	5.3	MLL2	missense	p.Ser618Phe
Case 10	chr7	151873795	T	A	54.8	MLL3	missense	p.Thr2915Ser
Case 10	chr7	151877040	C	T	6	MLL3	missense	p.Gly2441Arg
Case 10	chr7	151877073	G	A	5.3	MLL3	nonsense	p.Gln2430Ter
Case 10	chr7	151877836	G	A	6	MLL3	missense	p.Thr2370Ile
Case 10	chr7	151877867	G	A	5.1	MLL3	missense	p.Pro2360Ser
Case 10	chr7	151945072	-	T	39	MLL3	nonsense	p.Tyr816Ter
Case 10	chr10	21962549	G	A	5.5	MLLT10	missense	p.Gly441Asp
Case 10	chr22	28194473	G	A	8	MN1	missense	p.Pro687Ser
Case 10	chr6	135511010	G	A	8.4	MYB	missense	p.Glu99Lys

Case 10	chr16	15814855	C	T	18.3	MYH11	missense	p.Met1551Ile
Case 10	chr8	71039159	C	T	5.4	NCOA2	missense	p.Gly1269Arg
Case 10	chr10	51586295	C	T	5	NCOA4	nonsense	p.Gln591Ter
Case 10	chr17	5445194	-	C	5.7	NLRP1	frameshiftinsertion	p.Cys894fs
Case 10	chr3	52598137	C	T	5.6	PBRM1	missense	p.Met1243Ile
Case 10	chr1	164532479	C	T	8.2	PBX1	missense	p.His66Tyr
Case 10	chr7	106509886	C	T	5.7	PIK3CG	missense	p.Thr627Ile
Case 10	chr7	106509924	G	A	5	PIK3CG	missense	p.Val640Ile
Case 10	chr6	51612806	G	A	7	PKHD1	missense	p.Ser3203Leu
Case 10	chr1	6528564	C	T	45.7	PLEKHG5	missense	p.Gly847Ser
Case 10	chr6	31138330	C	G	56.2	POU5F1	missense	p.Gly23Ala
Case 10	chr8	48815184	C	T	6.1	PRKDC	missense	p.Ala1072Thr
Case 10	chr9	8389407	C	T	5.4	PTPRD	missense	p.Gly1404Glu
Case 10	chr9	8518064	C	T	5.8	PTPRD	missense	p.Glu443Lys
Case 10	chr9	8528777	C	T	5.3	PTPRD	missense	p.Asp119Asn
Case 10	chr20	40911161	G	A	5.5	PTPRT	missense	p.Thr715Ile
Case 10	chr3	12650323	G	A	5.2	RAF1	missense	p.His175Tyr
Case 10	chr13	48878069	A	-	37.1	RB1	frameshiftdeletion	p.Thr9fs
Case 10	chr17	78346453	G	A	5.7	RNF213	missense	p.Glu4224Lys
Case 10	chr17	78363664	C	T	5.5	RNF213	missense	p.Leu5078Phe
Case 10	chr8	93017465	G	A	5.5	RUNX1T1	missense	p.Pro218Ser
Case 10	chr3	47163467	G	A	5.5	SETD2	missense	p.Pro887Ser
Case 10	chrX	123504030	C	T	5.3	SH2D1A	missense	p.Ala69Val

Case 10	chr6	152683412	C	A	46.1	SYNE1	missense	p.Val3398Phe
Case 10	chr6	152706863	C	T	6.2	SYNE1	nonsense	p.Trp2866Ter
Case 10	chr6	152706874	G	A	5.2	SYNE1	missense	p.Leu2863Phe
Case 10	chr6	152806070	C	T	8.9	SYNE1	missense	p.Arg362Lys
Case 10	chr9	32632436	C	T	6.1	TAF1L	missense	p.Val1048Met
Case 10	chr9	32632439	C	T	5.8	TAF1L	missense	p.Val1047Met
Case 10	chr9	32632547	C	T	5.6	TAF1L	missense	p.Asp1011Asn
Case 10	chr9	32632574	C	G	42.9	TAF1L	missense	p.Ala1002Pro
Case 10	chr10	70406592	C	T	5.4	TET1	missense	p.Thr1369Ile
Case 10	chr4	106156616	G	A	5	TET2	missense	p.Arg506Lys
Case 10	chr4	106183006	G	A	5	TET2	splicing	
Case 10	chr15	43579571	C	T	5	TGM7	missense	p.Gly258Ser
Case 10	chr15	39884882	G	T	32.8	THBS1	missense	p.Gln882His
Case 10	chr1	2491418	G	A	12.3	TNFRSF14	splicing	
Case 10	chr14	92465635	G	A	5.6	TRIP11	missense	p.Thr1614Ile
Case 10	chr8	103269859	C	T	6.6	UBR5	splicing	
Case 10	chr8	103307464	C	T	5.1	UBR5	missense	p.Met1342Ile
Case 10	chr4	1936885	A	-	19.8	WHSC1	frameshiftdeletion	p.Arg526fs
Case 10	chr4	1980559	C	-	25.4	WHSC1	frameshiftdeletion	p.Pro1343fs
Case 10	chr9	100449437	C	T	5.5	XPA	missense	p.Val166Met
Case 10	chr9	100459499	C	T	6.2	XPA	missense	p.Ala26Thr

Table S3. Clinical findings of nodal Bcl-2-positive follicular lymphoma

No.	Age (y)	Sex	Tumour size (mm)	Autoimmune thyroiditis	sIL-2R (U/ml)	LDH (U/l)	BM involvement	Leukemic picture in PB	Clinical stage	B symptoms	Treatment	Survival
15	69	F	11×6	–	1953	201	–	–	IV	–	G-B	alive at 1 y 4 mo, CMR
16	72	F	7×5	–	978	161	–	–	IV	–	R-B	alive at 1 y 7 mo, CMR
17	66	F	15×8	–	547	145	–	–	III	–	R-B	alive at 1 y 11 mo, CMR
18	68	M	20×17×15	–	503	189	–	–	III	–	resection and rituximab	alive at 2 y 4 mo with recurrence and bone metastasis
19	50	F	14×9	–	355	143	ND	–	III	–	R-B	alive at 2 y 9 mo, CMR

y, year; sIL-2R, soluble interleukin-2 receptor; BM, bone marrow; ND, no data; PB, peripheral blood; R-B, chemotherapy with rituximab and bendamustine; G-B, chemotherapy with obinutuzumab and bendamustine; mo, month; CMR, complete metabolic response

Table S4. Results of immunohistochemical analyses for epigenetic modifiers and methylation status of histone in nodal Bcl-2-positive follicular lymphoma

	Epigenetic modifiers				Methylation status of histone	
No.	EZH2	MLL2/KMT2D	CBP/CREBBP	EP300	H3K27me3	H3K4me3
15	+	−	+	+	+	+
16	w+	−	+	+	+	+
17	+	−	−	+	w+	+
18	w+	+	+	+	+	+
19	w+	+	+	+	+	+

w, weak