

# Programmed cell death ligand 1 expression in aggressive pediatric non-Hodgkin lymphomas: frequency, genetic mechanisms, and clinical significance

Kevin E. Fisher,<sup>1,2</sup> Lizmery S. Ferguson,<sup>2</sup> Amy M. Coffey,<sup>1,2,3</sup> Brian Y. Merritt,<sup>1</sup> Jonathan L. Curry,<sup>4</sup> Andrea N. Marcogliese,<sup>1,2</sup> Angela M. Major,<sup>1</sup> Kala Y. Kamdar,<sup>5</sup> Dolores H. Lopez-Terrada<sup>1,2,5</sup> and Choladda V. Curry<sup>1,2</sup>

<sup>1</sup>Department of Pathology and Immunology, Baylor College of Medicine, Houston;

<sup>2</sup>Department of Pathology, Texas Children's Hospital, Houston; <sup>3</sup>Clinical Pathology Associates, Austin; <sup>4</sup>Department of Pathology and Translational Molecular Pathology, Division of Pathology and Laboratory Medicine, The University of Texas M.D. Anderson Cancer Center, Houston and <sup>5</sup>Department of Pediatrics, Baylor College of Medicine, Texas Children's Cancer and Hematology Centers, Houston, TX, USA

## Correspondence:

Kevin E. Fisher  
[kevin.fisher@bcm.edu](mailto:kevin.fisher@bcm.edu)  
Choladda V. Curry  
[c Curry@bcm.edu](mailto:c Curry@bcm.edu)

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**Supplemental Table 1: IHC Scoring Criteria**

<b>Population scored</b>	<b>Abbreviation</b>	<b>Antibody (clone)</b>	<b>Cutoff positivity*</b>	<b>Notes</b>
Tumor cells	PD-L1-Tum	PD-L1 (28-8)	5%	Number of PD-L1-positive tumor/total number of viable tumor cells
Macrophages	PD-L1-Mac	PD-L1 (28-8)	20%	Area of PD-L1-positive macrophages/total tumor area
Tumor infiltrating lymphocytes	PD-1-TIL	PD-1 (MRQ-22)	20%	Number of PD-1-positive TILs/Total number of TILs

\*Only membranous staining was considered positive for both PD-L1 and PD-1

**Supplemental Table 2: Expanded Cohort Data**

Sample	Age	Sex	Site	Specimen	Diagnosis	LBCL Stage (IPNHLSS)
LBCL-1	9.3	M	Nasopharynx	Biopsy	DLBCL-NOS	III
LBCL-2	4.2	F	Cervical LN, left	Biopsy	DLBCL-NOS	I
LBCL-3	13.7	M	Cervical LN, left	Excision	DLBCL-NOS	III
LBCL-4	11.5	M	Small intestine	Segmental resection	DLBCL-NOS	III
LBCL-5	10.8	F	Ileum and cecum	Segmental resection	DLBCL-NOS	III
LBCL-6	4.2	F	Lung, Left lower lobe	Excisional biopsy	DLBCL-NOS	III
LBCL-7	5.5	F	Cervical LN, left	Excision	DLBCL-NOS	I
LBCL-8	10.8	F	Cervical LN, left	Excision	DLBCL with IGH@-MYC	II
LBCL-9	8.3	M	Cervical LN, left	Excision	PIA-LBCL	N/A
LBCL-10	4.8	M	Kidney, right	Biopsy	DLBCL-NOS	III
LBCL-11	10.1	F	Soft tissue, right parietal scalp	Excisional biopsy	DLBCL-NOS	I
LBCL-12	7.5	F	Ileum	Segmental resection	DLBCL-NOS	III
LBCL-13	11.1	M	Ileum and cecum	Ileocectomy	DLBCL-NOS	III
LBCL-14	18.0	M	Retroperitoneum	Biopsy	PIA-LBCL (THRLBCL)	III
LBCL-15	13.7	F	Humerus, right proximal	Biopsy	DLBCL-NOS	I
LBCL-16	16.0	M	Abdominal mass	Biopsy	DLBCL-NOS	III
LBCL-17	13.3	M	Cervical LN, left	Excision	DLBCL-NOS	I
LBCL-18	15.5	M	Nasopharynx	Biopsy	DLBCL with IGH@-MYC	I
LBCL-19	17.7	F	Mediastinum	Biopsy	PMBCL	III
LBCL-20	15.6	F	Mediastinum	Excisional biopsy	PMBCL	III
LBCL-21	12.3	F	Orbit, right	Excision	THRLBCL	I
LBCL-22	17.6	M	Mediastinum	Biopsy	PMBCL	III
LBCL-23	15.9	M	Mesenteric mass	Excisional biopsy	PTLD-DLBCL	II
LBCL-24	4.9	F	Cervical LN, right	Biopsy	PTLD-DLBCL	III
LBCL-25	16.0	F	Tonsil, right	Tonsillectomy	PTLD-DLBCL	I
LBCL-26	3.4	F	Liver	Biopsy	PTLD-DLBCL	III
LBCL-27	16.9	F	Mediastinum	Biopsy	PTLD-DLBCL	III
LBCL-28	16.2	F	Liver	Biopsy	PTLD-DLBCL	III
LBCL-29	21.4	M	Abdominal mass	Biopsy	PTLD-DLBCL	III
LBCL-30	7.6	F	Cervical LN, left	Excisional biopsy	PTLD-DLBCL	II
LBCL-31	15.7	M	Kidney, left	Biopsy	PTLD-DLBCL	III
LBCL-32	17.4	F	Cervical LN, left	Biopsy	PTLD-DLBCL	I-II
LBCL-33	6.0	M	Mediastinum	Biopsy	PTLD-DLBCL	III

Extranodal vs. Nodal	LBCL De novo vs. PTLD	PTLD, Transplant	PD-L1-Tum Score	PD-L1-Tum (% Tumor)	PD-L1-Mac (% Total)
Extranodal	De novo	.	NEG	0	0
Nodal	De novo	.	NEG	0	0
Nodal	De novo	.	POS	50	0
Extranodal	De novo	.	NEG	0	0
Extranodal	De novo	.	NEG	0	0
Extranodal	De novo	.	POS	60	0
Nodal	De novo	.	NEG	0	0
Nodal	De novo	.	NEG	0	0
Nodal	De novo	.	POS	30	0
Extranodal	De novo	.	POS	50	0
Extranodal	De novo	.	NEG	0	0
Extranodal	De novo	.	NEG	0	20
Extranodal	De novo	.	NEG	0	10
Extranodal	De novo	.	POS	100	70
Extranodal	De novo	.	POS	60	0
Extranodal	De novo	.	NEG	0	10
Nodal	De novo	.	NEG	0	20
Extranodal	De novo	.	POS	30	0
Extranodal	De novo	.	POS	70	0
Extranodal	De novo	.	POS	50	0
Extranodal	De novo	.	POS	100	0
Extranodal	De novo	.	POS	90	0
Nodal	PTLD	Lung	POS	70	0
Nodal	PTLD	Lung (bilateral)	POS	100	0
Extranodal	PTLD	Lung (prior liver)	POS	70	0
Extranodal	PTLD	Liver (x2)	NEG	0	0
Extranodal	PTLD	Lung	POS	90	0
Extranodal	PTLD	Bone marrow	NEG	0	0
Extranodal	PTLD	Heart (x2)	NEG	0	5
Nodal	PTLD	Bone marrow	POS	80	0
Extranodal	PTLD	Lung (bilateral)	POS	50	0
Nodal	PTLD	Renal (x2)	POS	40	0
Extranodal	PTLD	Renal	POS	80	0

PD-1-TIL (% Total)	CD10	BCL6	MUM1	GCB vs non-GCB	EBV score	EBER/LMP-1	MYC-IHC	FISH MYC-R
0	POS	POS	NEG	GCB	NEG	NEG/NEG	NEG	NEG
0	POS	POS	POS	GCB	NEG	NEG/NEG	NEG	NEG
0	NEG	POS	NEG	GCB	POS	POS/POS	NEG	NEG
0	POS	POS	POS	GCB	NEG	NEG/NEG	NEG	NEG
5	POS	POS	NEG	GCB	NEG	NEG/NEG	NEG	NEG
0	NEG	NEG	NEG	non-GCB	POS	POS/POS	NEG	NEG
0	NEG	POS	POS	non-GCB	NEG	NEG/NEG	NEG	NEG
0	POS	POS	POS	GCB	NEG	NEG/NEG	POS	POS
10	NEG	POS	NEG	GCB	NEG	NEG/NEG	N/A	N/A
0	POS	POS	NEG	GCB	NEG	NEG/NEG	N/A	N/A
0	NEG	NEG	NEG	non-GCB	NEG	NEG/NEG	NEG	N/A
10	POS	POS	NEG	GCB	NEG	NEG/NEG	NEG	NEG
10	POS	POS	POS	GCB	NEG	NEG/NEG	NEG	N/A
0	NEG	NEG	NEG	non-GCB	NEG	NEG/NEG	NEG	NEG
0	POS	NEG	NEG	GCB	NEG	NEG/NEG	NEG	NEG
0	POS	POS	POS	GCB	NEG	NEG/NEG	NEG	NEG
0	NEG	POS	POS	non-GCB	NEG	NEG/NEG	NEG	NEG
0	POS	POS	NEG	GCB	NEG	NEG/NEG	POS	POS
0	NEG	POS	POS	non-GCB	NEG	NEG/NEG	NEG	NEG
0	POS	POS	POS	GCB	NEG	NEG/NEG	NEG	NEG
20	NEG	POS	NEG	GCB	NEG	NEG/NEG	NEG	NEG
0	NEG	POS	POS	non-GCB	NEG	NEG/NEG	NEG	NEG
0	NEG	NEG	POS	non-GCB	POS	POS/POS	NEG	NEG
N/A	N/A	N/A	N/A	N/A	POS	POS/NA	NEG	NEG
0	NEG	NEG	POS	non-GCB	POS	POS/POS	NEG	NEG
0	N/A	N/A	N/A	N/A	POS	POS/POS	POS	N/A
0	NEG	NEG	POS	non-GCB	POS	POS/POS	N/A	N/A
0	NEG	NEG	POS	non-GCB	POS	POS/POS	NEG	NEG
0	POS	NEG	NEG	GCB	NEG	NEG/NEG	POS	NEG
0	NEG	NEG	POS	non-GCB	POS	POS/POS	NEG	NEG
0	NEG	POS	POS	non-GCB	POS	POS/POS	NEG	NEG
0	NEG	NEG	POS	non-GCB	POS	POS/POS	NEG	NEG
0	POS	POS	NEG	GCB	POS	POS/NEG	NEG	NEG

Clinical Trial/Treatment	OS Months	EFS Months	Disease Status
TAT POG 9315	10.8	10.8	DOD
TAT POG 9219	217.1	217.1	NED
TAT POG 9315; TAT COG ANHL0121; and BMT	215.1	59.8	REL, NED
POG 9317	58.7	58.7	NED
POG 9219	117.1	117.1	NED
TAT POG 9315; TAT COG ANHL0121; and BMT	20.9	10.5	REL, NED
TAT POG 9219	40.1	40.1	NED
POG 9917	113.2	113.2	NED
N/A	160.2	160.2	REL, NED
COG ANHL01P1	88.4	88.4	NED
POG 9315	153.5	153.5	NED
POG 9219	171.2	171.2	NED
TAT POG 9219	158.9	158.9	NED
TAT POG 9917	16.0	8.0	REL, DOD
POG 9219	123.3	123.3	NED
TAT AIEOP ALCL 99	68.6	68.6	NED
TAT POG 9219	92.9	92.9	NED
COG ANHL01P1	87.9	87.9	NED
POG 9315	5.9	5.9	NED
POG 9315 and BMT	32.2	4.2	REL, DOD
POG 9219	253.9	253.9	NED
POG 9315 and BMT	12.6	7.1	REF, DOD
[None] Rituximab + reduced immune suppressant	2.8	2.8	DOD
COG ANHL0221	9.0	9.0	DOD
TAT COG ANHL0221	50.0	50.0	NED
POG 9219	123.2	123.2	NED
TAT COG ANHL0221	131.8	5.9	REL, NED
[None] Rituximab	0.6	0.6	DOD
TAT COG ANHL01P1	17.8	17.8	DOC (transplant)
[None] EBV-cytotoxic T lymphocyte (CTL) therapy (VIRAGE protocol)	57.2	57.2	NED
TAT COG ANHL0221	105.7	105.7	NED
TAT COG PTLD protocol	88.2	88.2	NED
POG 9317	265.9	265.9	NED

Underlying Condition	NGS
.	No
.	No
.	Yes
.	No
.	No
.	No
.	No
.	No
Ataxia Telangiectasia	Yes
.	No
.	No
.	Yes
.	Yes
Ataxia Telangiectasia	Yes
.	No
.	Yes
.	Yes
.	No
.	No
.	No
.	No
.	No
Hepatopulmonary syndrome	No
Chronic interstitial lung disease	No
Cystic fibrosis	No
Biliary atresia	Yes
Cystic fibrosis	Yes
Stage IV CHL, MC, EBV+, primary immunodeficiency	No
Dilated cardiomyopathy	Yes
Therapy-related myeloid neoplasm post Ewing Sarcoma treatment	Yes
Medication refractory pulmonary hypertension	No
End stage renal disease due to FSGS nephrotic syndrome	Yes
Posterior urethral valve disorder	No

## Karyotype

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N/A

47,XX,+8[4]/46,XX[2]

N/A

N/A

N/A

N/A

N/A

50,XX,+2,+7,t(8;14)(q24;q32),+10,+11[20]

N/A

N/A

N/A

N/A

N/A

N/A

46,XX[20]

46,XY[20]

45,X,-Y,t(6;22)(p25;q11.2)[15]/45,sl,i(17)(q10)[4]

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

46,XX,del(5)(p14),t(6;8)(p25;p21),t(11;16)(q13;p13.1)[20]

46,XY,add(18)(q23)[8]/46,sl,add(13)(q32)[9]/45~46,sl,add(17)(p13),+mar[cp3]

N/A

N/A

N/A

N/A



Sample	Age	Sex	Site	Specimen	Diagnosis	LBCL Stage (IPNHLSS)
BL-1	2.6	M	Pleura, left	Biopsy	BL	.
BL-2	5.1	M	Abdominal mass	Biopsy	BL	.
BL-3	9.6	M	Nasopharynx	Biopsy	BL	.
BL-4	4.7	M	Omental mass	Biopsy	BL	.
BL-5	8.6	M	Ileocecum	Biopsy	BL	.
BL-6	12.8	M	Tonsil, left	Biopsy	BL	.
BL-7	6.1	M	Omental mass	Biopsy	BL	.
BL-8	5.1	M	Liver	Biopsy	BL	.
BL-9	7.1	F	Retropharynx	Biopsy	BL	.
BL-10	13.4	M	Testicle, right	Biopsy	BL	.
BL-11	11.5	F	Abdominal mass	Biopsy	BL	.
BL-12	6.1	M	Abdominal mass	Biopsy	BL	.
BL-13	14.1	M	Ileum	Biopsy	BL	.
BL-14	5.7	M	Abdominal mass	Biopsy	BL	.
BL-15	10.8	M	Cervical LN, right	Excision	BL	.
BL-16	14.3	M	Pelvic mass	Biopsy	BL	.
BL-17	3.3	M	Kidney	Biopsy	BL	.
BL-18	6.3	F	Abdominal mass	Biopsy	BL	.
BL-19	3.7	M	Abdominal mass	Biopsy	BL	.
BL-20	10.0	M	Omental mass	Biopsy	BL	.
BL-21	9.2	M	Nasopharynx	Biopsy	BL	.
BL-22	9.0	M	Tibia, right	Biopsy	BL	.
BL-23	12.8	M	Abdominal mass	Biopsy	BL	.
BL-24	8.1	M	Peritoneum	Biopsy	BL	.
BL-25	4.8	M	Abdominal mass	Biopsy	BL	.
BL-26	18.5	M	Inguinal LN, right	Excision	BL	.
BL-27	3.0	M	Maxillary sinus	Biopsy	BL	.
ALCL-1	10.8	M	Subcutaneous tissue, thigh	Biopsy	ALCL, ALK pos	.
ALCL-2	6.7	F	Cervical LN, left	Excision	ALCL, ALK pos	.
ALCL-3	15.8	M	Cervical LN, left	Excision	ALCL, ALK pos	.
ALCL-4	13.1	M	Axillary LN, right	Biopsy	ALCL, ALK pos	.
ALCL-5	12.3	M	Cervical LN, right	Excision	ALCL, ALK pos	.
ALCL-6	15.0	F	Cervical LN, left	Biopsy	ALCL, ALK pos	.
ALCL-7	13.8	M	Axillary LN, right	Biopsy	ALCL, ALK pos	.
ALCL-8	14.3	M	Retroperitoneum	Biopsy	ALCL, ALK pos	.

Extranodal vs. Nodal	LBCL De novo vs. PTLD	PTLD, Transplant	PD-L1-Tum Score	PD-L1-Tum (% Tumor)	PD-L1-Mac (% Total)
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	5
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	5
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	10
Extranodal	.	.	NEG	0	0
Nodal	.	.	NEG	0	40
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	30
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	0
Extranodal	.	.	NEG	0	40
Extranodal	.	.	NEG	0	40
Nodal	.	.	NEG	0	10
Extranodal	.	.	NEG	0	60
Extranodal	.	.	POS	100	0
Nodal	.	.	POS	100	0
Nodal	.	.	POS	100	0
Nodal	.	.	POS	60	0
Nodal	.	.	POS	100	0
Nodal	.	.	POS	90	0
Nodal	.	.	POS	80	0
Extranodal	.	.	POS	30	0

PD-1-TIL (% Total)	CD10	BCL6	MUM1	GCB vs non-GCB	EBV score	EBER/LMP-1	MYC-IHC	FISH MYC-R
0	N/A	N/A	N/A		POS	POS/NA	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		NEG	NEG/NA	POS	POS
0	N/A	N/A	N/A		NEG	NEG/NA	POS	POS
0	N/A	N/A	N/A		NEG	NEG/NA	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		NEG	NEG/NA	POS	N/A
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		NEG	NEG/NA	POS	POS
0	N/A	N/A	N/A		NEG	NEG/NA	POS	N/A
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	N/A
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		NEG	NEG/NA	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		NEG	NEG/NA	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	N/A
0	N/A	N/A	N/A		NEG	NEG/NA	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	N/A
0	N/A	N/A	N/A		NEG	NEG/NA	POS	POS
0	N/A	N/A	N/A		N/A	N/A	NEG	NEG
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		NEG	NEG/NA	POS	POS
0	N/A	N/A	N/A		N/A	N/A	POS	POS
0	N/A	N/A	N/A		N/A	N/A	N/A	N/A
0	N/A	N/A	N/A		N/A	N/A	N/A	N/A
0	N/A	N/A	N/A		N/A	N/A	N/A	N/A
0	N/A	N/A	N/A		N/A	N/A	N/A	N/A
20	N/A	N/A	N/A		N/A	N/A	N/A	N/A
0	N/A	N/A	N/A		N/A	N/A	N/A	N/A
0	N/A	N/A	N/A		N/A	N/A	N/A	N/A
20	N/A	N/A	N/A		N/A	N/A	N/A	N/A





## Karyotype

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N/A  
N/A  
N/A  
N/A  
46,XY[20]  
N/A  
46,XY[20]  
N/A  
46,XX[20]  
N/A  
46,XX,t(8;14)(q24.1;q32)[7]/46,idem,der(7)t(1;7)(q12;q36)[13]  
46,XY,t(8;14)(q24.1;q32)[3]/46,XY[17]  
46,XY[20]  
46,XY[20]  
N/A  
N/A  
N/A  
N/A  
N/A  
46,XY[20]  
N/A  
N/A  
N/A  
N/A  
46,XY,t(8;14)(q24.1;q32)[12]/46,sl,del(6)(q15)[5]/46,XY[1]  
46,XY,t(8;14)(q24.1;q32)[19]/46,XY[1]  
N/A  
N/A  
N/A  
46,XY[20]  
N/A  
49,XY,+X,+2,der(2)inv(2)(p23q35)t(2;12)(p21;q24.3)del(12)(q24.3),ider(2)(q10)inv(2)(p23q35),t(4;18)(?p15.2;p11.3),add(7)(q32),+add(7)(q32),der(10)t(7;10)(?;q26),der(12)inv(2) t(2;12)[10]/46,XY[4]  
der(2)t(2;5)(p21;q35)(5'ALK-,3'ALK-),der(5)t(2;5)(p21;q35)inv(2)(p21p23){3'ALK+,5'ALK+}[cp7]/90~93,idemx2[cp13]  
46,XY,t(2;5)(p23;q35)[3]/47,idem,+7[17]  
46,XY,der(2)t(2;7)(p21;p13),der(3)t(2;3)(p21;p21.3),t(6;8)(p21.1;q24.1),der(7)t(7;15)(p13;q24)ins(19;7)(p13.1;q22q32),der(15)t(15;19)(q24;p13.1),der(19)t(3;19)(p21.3;p13.1) ins(19;7)(p13.1;q22q32),add(21)(q22)[1]/45,sl,-Y[19]

#### Abbreviations:

AIEOP, Associazione Italiana, Ematologia Oncologia Pediatrica; APO, doxorubicin, prednisone, vincristine, mercaptopurine; ALCL, anaplastic large cell lymphoma; AT, ataxia telangiectasia; BL, Burkitt lymphoma; BMT, bone marrow transplant; CHL, classical Hodgkin lymphoma; CHOP, cyclophosphamide, doxorubicin, vincristine, prednisone; COG, Children's Oncology Group; CTX, cyclophosphamide; DEX, dexamethasone; DLBCL, diffuse large B-cell lymphoma; DOC, died of complications; DOD, died of disease; DOX, doxorubicin hydrochloride; EBER, Epstein-Barr virus encoded RNA; EBV, Epstein-Barr virus positive; F, female; GCB, germinal center B-cell phenotype; HDARA-C, high dose cytarabine; ICE, ifosfamide, carboplatin, etoposide; IDMTX, intermediate dose methotrexate, IHC, immunohistochemistry; IPNHLSS, International Pediatric Non-Hodgkin Lymphoma Staging System; LBCL, large B-cell lymphoma; LMP-1, latent membrane protein 1; LN, lymph node; M, male; MC, multicentric; MTX, methotrexate; MYC-R, MYC gene rearrangement; N/A, not available; NED, no evidence of disease; NEG, negative; NGS, next-generation sequencing; NOS, not otherwise specified; PIA, primary immunodeficiency-associated; PD-1-TIL, PD-1 expression on tumor infiltrating lymphocytes; PD-L1-Mac, PD-L1 expression on macrophages; PD-L1-Tum; PD-L1 expression on tumor (lymphoma) cells; PMBCL, primary mediastinal large B-cell lymphoma; POG, Pediatric Oncology Group; POS, Positive; PTLD, post-transplant lymphoproliferative disorder; REL, relapsed; REF, refractory; TAT, treated according to; THRLBCL, T-cell/histocyte-rich large B-cell lymphoma; VCR, vincristine sulfate

**Supplemental Table 3: Expanded Next-Generation Sequencing (NGS) Data**

Sample	Gene	Pos (hg19)	RefSeq RNA	CDS	Protein	Read Cov	VAF	Tier
BL-21	ARID1A	chr1:27102083	NM_006015.4	c.5009G>A	p.Trp1670Ter	506	0.32	I/II
BL-21	TP53	chr17:7578406	NM_000546.5	c.524G>A	p.Arg175His	240	0.75	I/II
BL-21	CNOT3	chr19:54651928	NM_014516.3	c.940C>T	p.Pro314Ser	392	0.35	III
BL-21	CREBBP	chr16:3929881	NM_004380.2	c.37A>C	p.Lys13Gln	865	0.36	III
BL-21	GNA13	chr17:63049637	NM_006572.4	c.493C>T	p.Arg165Cys	778	0.36	III
BL-21	MYC	chr8:128750537	NM_002467.4	c.74G>C	p.Arg25Thr	691	0.67	III
BL-21	NOTCH2	chr1:120465364	NM_024408.3	c.4897G>A	p.Val1633Ile	421	0.45	III
BL-21	RAD21	chr8:117879001	NM_006265.2	c.-32-1G>A	.	289	0.46	III
BL-21	STAT3	chr17:40481445	NM_003150.3	c.1264G>A	p.Gly422Ser	599	0.39	III
BL-21	SYNE1	chr6:152551837	NM_182961.3	c.21040A>C	p.Ile7014Leu	278	0.50	III
LBCL-3	FAT1	chr4:187629714	NM_005245.3	c.1268T>C	p.Leu423Ser	444	0.45	III
LBCL-3	JAK3	chr19:17943372	NM_000215.3	c.2636A>G	p.His879Arg	482	0.51	III
LBCL-3	NOTCH3	chr19:15302619	NM_000435.2	c.739A>C	p.Asn247His	421	0.44	III
LBCL-3	SYNE1	chr6:152751754	NM_182961.3	c.4552G>C	p.Glu1518Gln	522	0.36	III
LBCL-3	TERT	chr5:1294598	NM_198253.2	c.403G>A	p.Gly135Arg	117	0.36	III
LBCL-3	ZFH3	chr16:72832259	NM_006885.3	c.4322T>C	p.Phe1441Ser	601	0.60	III
LBCL-9	ATM	chr11:108203613	NM_000051.3	c.7913G>A	p.Trp2638Ter	195	0.43	I/II
LBCL-9	ATM	chr11:108181032	NM_000051.3	c.5908C>T	p.Gln1970Ter	145	0.52	I/II
LBCL-9	ANK3	chr10:61831470	NM_020987.3	c.9169G>A	p.Gly3057Arg	164	0.07	III
LBCL-9	ECT2L	chr6:139206899	NM_001077706.2	c.2191C>T	p.His731Tyr	154	0.49	III
LBCL-9	JAK1	chr1:65312368	NM_002227.2	c.1951G>A	p.Val651Met	225	0.45	III
LBCL-9	KMT2D	chr12:49444102	NM_003482.3	c.3269C>T	p.Ala1090Val	126	0.09	III
LBCL-9	PRDM2	chr1:14108821	NM_012231.4	c.4531A>G	p.Ser1511Gly	181	0.45	III
LBCL-9	PRDM2	chr1:14105219	NM_012231.4	c.929T>C	p.Ile310Thr	210	0.23	III
LBCL-9	SYNE1	chr6:152639250	NM_182961.3	c.16538G>A	p.Arg5513Lys	209	0.54	III
LBCL-9	TET1	chr10:70405023	NM_030625.2	c.2537A>G	p.His846Arg	135	0.36	III
LBCL-9	TET2	chr4:106157568	NM_001127208.2	c.2469G>C	p.Met823Ile	176	0.49	III
LBCL-9	ZFH3	chr16:72821593	NM_006885.3	c.10579_10581dupGGC	p.Gly3527dup	108	0.24	III
LBCL-12	DHX15	chr4:24550530	NM_001358.2	c.1196G>A	p.Arg399His	891	0.25	III
LBCL-12	PAX5	chr9:37015160	NM_016734.2	c.244G>A	p.Val82Ile	1049	0.48	III
LBCL-12	PDGFRA	chr4:55127301	NM_006206.4	c.89T>C	p.Ile30Thr	656	0.42	III
LBCL-12	RELN	chr7:103629700	NM_005045.3	c.104C>T	p.Pro35Leu	203	0.07	III
LBCL-13	BCOR	chrX:39921444	NM_001123385.1	c.4376A>G	p.Asn1459Ser	528	0.89	I/II



LBCL-13	CCND3	chr6:41903745	NM_001760.3	c.811dupC	p.Arg271ProfsTer53	883	0.41	I/II
LBCL-13	U2AF1	chr21:44524456	NM_006758.2	c.101C>T	p.Ser34Phe	663	0.45	I/II
LBCL-13	ARID1A	chr1:27107048	NM_006015.4	c.6659A>G	p.Asn2220Ser	1059	0.45	III
LBCL-13	CCND3	chr6:41903710	NM_001760.3	c.847A>G	p.Thr283Ala	962	0.45	III
LBCL-13	GNA13	chr17:63010604	NM_006572.4	c.905T>G	p.Ile302Ser	2387	0.44	III
LBCL-13	PCBP1	chr2:70315815	NM_006196.3	c.940A>G	p.Lys314Glu	1051	0.41	III
LBCL-14	ATM	chr11:108180895	NM_000051.3	c.5771C>A	p.Ser1924Ter	214	0.52	I/II
LBCL-14	ABL2	chr1:179089370	NM_007314.3	c.1000G>A	p.Ala334Thr	260	0.07	III
LBCL-14	ARID1A	chr1:27087500	NM_006015.4	c.2074A>G	p.Ile692Val	239	0.47	III
LBCL-14	DNMT3A	chr2:25466773	NM_175629.2	c.1930G>A	p.Ala644Thr	227	0.05	III
LBCL-14	HDAC9	chr7:18993842	NM_178425.2	c.3011T>C	p.Ile1004Thr	156	0.38	III
LBCL-14	KAT6B	chr10:76788834	NM_012330.3	c.4252C>T	p.Pro1418Ser	143	0.55	III
LBCL-14	MYB	chr6:135516886	NM_001130173.1	c.949A>T	p.Thr317Ser	354	0.41	III
LBCL-14	PIK3C2A	chr11:17153514	NM_002645.2	c.2180A>G	p.Lys727Arg	227	0.44	III
LBCL-14	RELN	chr7:103159939	NM_005045.3	c.7693G>A	p.Val2565Met	239	0.05	III
LBCL-14	SMARCA4	chr19:11113835	NM_001128846.1	c.1943G>A	p.Gly648Glu	218	0.05	III
LBCL-14	SMC1A	chrX:53432069	NM_006306.3	c.2071G>A	p.Ala691Thr	112	0.11	III
LBCL-14	SUZ12	chr17:30322755	NM_015355.2	c.1768G>A	p.Glu590Lys	257	0.05	III
LBCL-14	SYNE1	chr6:152688468	NM_182961.3	c.9857C>T	p.Ser3286Phe	276	0.05	III
LBCL-16	CCND3	chr6:41903745	NM_001760.3	c.811dupC	p.Arg271ProfsTer53	619	0.17	I/II
LBCL-16	BAZ1A	chr14:35252413	NM_013448.2	c.2023C>T	p.Leu675Phe	598	0.51	III
LBCL-16	GNA13	chr17:63052528	NM_006572.4	c.184T>C	p.Ser62Pro	879	0.48	III
LBCL-16	SETX	chr9:135218103	NM_015046.5	c.472T>G	p.Leu158Val	432	0.46	III
LBCL-16	SETX	chr9:135204230	NM_015046.5	c.2755G>C	p.Val919Leu	534	0.45	III
LBCL-16	USP9X	chrX:40999979	NM_001039590.2	c.725T>G	p.Ile242Ser	338	1.00	III
LBCL-17	CUX1	chr7:101848448	NM_001202543.1	c.3161C>T	p.Ser1054Leu	461	0.44	III
LBCL-17	IKZF3	chr17:37944529	NM_012481.4	c.691A>C	p.Thr231Pro	962	0.49	III
LBCL-17	PCBP1	chr2:70315373	NM_006196.3	c.498G>A	p.Met166Ile	404	0.27	III
LBCL-17	RELN	chr7:103179743	NM_005045.3	c.6962C>T	p.Thr2321Met	300	0.40	III
LBCL-17	SYNE1	chr6:152763284	NM_182961.3	c.3934G>A	p.Glu1312Lys	457	0.50	III
LBCL-26	DDX3X	chrX:41204655	NM_001356.3	c.1171-2A>G	.	284	0.71	I/II
LBCL-26	ID3	chr1:23885709	NM_002167.4	c.209T>A	p.Leu70Gln	894	0.43	I/II
LBCL-26	TP53	chr17:7579538	NM_000546.5	c.149delinsAC	p.Ile50AsnfsTer2	446	0.26	I/II
LBCL-26	TP53	chr17:7578406	NM_000546.5	c.524G>A	p.Arg175His	424	0.35	I/II
LBCL-26	BIRC6	chr2:32740353	NM_016252.3	c.10865C>T	p.Ala3622Val	979	0.40	III
LBCL-26	DNM2	chr19:10886522	NM_001005361.2	c.529G>A	p.Ala177Thr	565	0.31	III

LBCL-26	MYC	chr8:128748840	NM_002467.4	c.1C>G	p.Leu1Val	1024	0.13	III
LBCL-26	PCBP1	chr2:70315818	NM_006196.3	c.943A>T	p.Ile315Phe	1795	0.50	III
LBCL-26	TET2	chr4:106156019	NM_001127208.2	c.920T>G	p.Leu307Arg	680	0.45	III
LBCL-26	USP7	chr16:8988910	NM_003470.2	c.3017C>T	p.Pro1006Leu	712	0.30	III
LBCL-27	ARID1A	chr1:27023408	NM_006015.4	c.514C>T	p.Gln172Ter	158	0.40	I/II
LBCL-27	ASXL2	chr2:25991689	NM_018263.4	c.553A>G	p.Ser185Gly	465	0.43	III
LBCL-27	CREBBP	chr16:3820773	NM_004380.2	c.2678C>T	p.Ser893Leu	495	0.47	III
LBCL-27	KMT2D	chr12:49423224	NM_003482.3	c.14035G>T	p.Ala4679Ser	514	0.49	III
LBCL-27	SYNE1	chr6:152712440	NM_182961.3	c.7976C>A	p.Thr2659Asn	559	0.50	III
LBCL-29	ASXL2	chr2:25972585	NM_018263.4	c.1840C>T	p.Arg614Ter	741	0.43	I/II
LBCL-29	CDKN2A	chr9:21971186	NM_001195132.1	c.172C>T	p.Arg58Ter	353	0.46	I/II
LBCL-29	CREBBP	chr16:3900321	NM_004380.2	c.775G>A	p.Ala259Thr	612	0.42	I/II
LBCL-29	FBXW7	chr4:153268144	NM_033632.3	c.664C>T	p.Arg222Ter	549	0.41	I/II
LBCL-29	FBXW7	chr4:153247373	NM_033632.3	c.1429G>A	p.Gly477Ser	266	0.42	I/II
LBCL-29	KMT2C	chr7:151891591	NM_170606.2	c.4441C>T	p.Arg1481Ter	425	0.39	I/II
LBCL-29	KMT2D	chr12:49431873	NM_003482.3	c.9265delG	p.Val3089TrpfsTer30	516	0.45	I/II
LBCL-29	KRAS	chr12:25398279	NM_033360.2	c.40G>A	p.Val14Ile	414	0.40	I/II
LBCL-29	TP53	chr17:7577069	NM_000546.5	c.869G>A	p.Arg290His	512	0.47	I/II
LBCL-29	TP53	chr17:7577538	NM_000546.5	c.743G>A	p.Arg248Gln	430	0.87	I/II
LBCL-29	ZFH3	chr16:72830902	NM_006885.3	c.5677_5678delAG	p.Arg1893GlyfsTer35	584	0.24	I/II
LBCL-29	ANK3	chr10:62149211	NM_020987.3	c.86G>A	p.Arg29His	768	0.47	III
LBCL-29	APC	chr5:112173860	NM_000038.5	c.2569G>A	p.Gly857Arg	427	0.49	III
LBCL-29	APC	chr5:112176330	NM_000038.5	c.5039A>C	p.Gln1680Pro	277	0.07	III
LBCL-29	ASXL1	chr20:31022248	NM_015338.5	c.1733G>A	p.Arg578His	678	0.41	III
LBCL-29	ASXL2	chr2:25982469	NM_018263.4	c.821C>T	p.Pro274Leu	646	0.41	III
LBCL-29	ATRX	chrX:76909656	NM_000489.3	c.4249C>T	p.Arg1417Trp	252	0.93	III
LBCL-29	BCL11B	chr14:99642134	NM_138576.2	c.1039C>T	p.Arg347Ter	194	0.38	III
LBCL-29	BCL11B	chr14:99642080	NM_138576.2	c.1093C>T	p.Arg365Trp	165	0.39	III
LBCL-29	BCL11B	chr14:99641950	NM_138576.2	c.1223C>T	p.Pro408Leu	376	0.22	III
LBCL-29	BCL11B	chr14:99641482	NM_138576.2	c.1691G>A	p.Arg564His	361	0.45	III
LBCL-29	BCL11B	chr14:99641205	NM_138576.2	c.1967delG	p.Gly656AlafsTer67	62	0.47	III
LBCL-29	BCL11B	chr14:99641083	NM_138576.2	c.2090C>T	p.Pro697Leu	348	0.47	III
LBCL-29	BCL11B	chr14:99640609	NM_138576.2	c.2564G>A	p.Arg855His	673	0.44	III
LBCL-29	BCL11B	chr14:99640979	NM_138576.2	c.2194G>A	p.Ala732Thr	410	0.07	III
LBCL-29	BCL11B	chr14:99641212	NM_138576.2	c.1961G>A	p.Arg654His	58	0.36	III
LBCL-29	BCOR	chrX:39933086	NM_001123385.1	c.1513G>A	p.Ala505Thr	391	0.92	III

LBCL-29	BIRC6	chr2:32768426	NM_016252.3	c.12410C>T	p.Ala4137Val	578	0.52	III
LBCL-29	BIRC6	chr2:32740755	NM_016252.3	c.11267G>A	p.Arg3756His	486	0.40	III
LBCL-29	CCND1	chr11:69458720	NM_053056.2	c.535C>T	p.Arg179Cys	486	0.42	III
LBCL-29	CDKN2A	chr9:21994314	NM_058195.3	c.17T>C	p.Leu6Ser	232	0.41	III
LBCL-29	CDKN2A	chr9:21970927	NM_001195132.1	c.431G>A	p.Arg144His	440	0.43	III
LBCL-29	CEBPA	chr19:33792519	NM_004364.3	c.802G>A	p.Gly268Ser	306	0.48	III
LBCL-29	CHD4	chr12:6710853	NM_001273.2	c.518G>A	p.Arg173Gln	661	0.40	III
LBCL-29	CREBBP	chr16:3808000	NM_004380.2	c.3419G>A	p.Arg1140Gln	386	0.38	III
LBCL-29	CREBBP	chr16:3779578	NM_004380.2	c.5470G>A	p.Ala1824Thr	1021	0.40	III
LBCL-29	CSF3R	chr1:36935322	NM_156039.3	c.1404delC	p.Ser469AlafsTer22	509	0.41	III
LBCL-29	CUX1	chr7:101892267	NM_001202543.1	c.4496T>C	p.Ile1499Thr	398	0.42	III
LBCL-29	DDX3X	chrX:41198321	NM_001356.3	c.136C>T	p.Arg46Ter	121	0.89	III
LBCL-29	DNMT3A	chr2:25468165	NM_175629.2	c.1511T>C	p.Leu504Pro	406	0.40	III
LBCL-29	ECT2L	chr6:139189264	NM_001077706.2	c.1499G>A	p.Gly500Asp	330	0.47	III
LBCL-29	FAT1	chr4:187525020	NM_005245.3	c.10660T>A	p.Ser3554Thr	363	0.43	III
LBCL-29	FAT1	chr4:187527354	NM_005245.3	c.10220C>T	p.Thr3407Met	393	0.46	III
LBCL-29	FAT4	chr4:126238209	NM_024582.4	c.643C>T	p.Gln215Ter	467	0.41	III
LBCL-29	FAT4	chr4:126238353	NM_024582.4	c.787G>A	p.Ala263Thr	394	0.50	III
LBCL-29	FLT3	chr13:28636193	NM_004119.2	c.179C>T	p.Pro60Leu	381	0.38	III
LBCL-29	GATA2	chr3:128205829	NM_032638.4	c.46G>A	p.Val16Met	326	0.42	III
LBCL-29	GATA2	chr3:128205143	NM_032638.4	c.298G>A	p.Gly100Arg	590	0.42	III
LBCL-29	GATA2	chr3:128204984	NM_032638.4	c.457G>A	p.Gly153Arg	411	0.42	III
LBCL-29	GNAS	chr20:57430368	NM_080425.2	c.2048C>T	p.Thr683Met	342	0.37	III
LBCL-29	HDAC9	chr7:18788735	NM_178425.2	c.2017G>A	p.Glu673Lys	664	0.60	III
LBCL-29	HUWE1	chrX:53577942	NM_031407.5	c.9305C>T	p.Ala3102Val	197	0.86	III
LBCL-29	IDH2	chr15:90628112	NM_002168.2	c.1207G>A	p.Val403Met	736	0.41	III
LBCL-29	JAK2	chr9:5089718	NM_004972.3	c.2616G>T	p.Gln872His	461	0.38	III
LBCL-29	JAK2	chr9:5089740	NM_004972.3	c.2638G>A	p.Ala880Thr	452	0.37	III
LBCL-29	JAK3	chr19:17945780	NM_000215.3	c.2080G>A	p.Glu694Lys	362	0.44	III
LBCL-29	KDM5A	chr12:419037	NM_001042603.1	c.3310G>T	p.Asp1104Tyr	512	0.39	III
LBCL-29	KIT	chr4:55592139	NM_000222.2	c.1463C>T	p.Thr488Met	442	0.43	III
LBCL-29	KIT	chr4:55564642	NM_000222.2	c.530G>A	p.Arg177His	471	0.38	III
LBCL-29	KMT2A	chr11:118352504	NM_001197104.1	c.3709G>A	p.Val1237Met	401	0.38	III
LBCL-29	KMT2D	chr12:49418624	NM_003482.3	c.15890C>T	p.Thr5297Met	488	0.39	III
LBCL-29	KMT2D	chr12:49446854	NM_003482.3	c.956C>T	p.Ala319Val	432	0.41	III
LBCL-29	LEF1	chr4:109002799	NM_016269.4	c.665C>T	p.Thr222Met	325	0.36	III

LBCL-29	MED12	chrX:70354676	NM_005120.2	c.4841T>C	p.Met1614Thr	218	0.88	III
LBCL-29	MGA	chr15:41961174	NM_001164273.1	c.82T>G	p.Leu28Val	529	0.45	III
LBCL-29	MGA	chr15:42032354	NM_001164273.1	c.4538G>A	p.Arg1513His	714	0.46	III
LBCL-29	MYB	chr6:135510956	NM_001130173.1	c.241C>T	p.Arg81Ter	449	0.38	III
LBCL-29	MYC	chr8:128753119	NM_002467.4	c.1280A>C	p.Lys427Thr	464	0.48	III
LBCL-29	NOTCH2	chr1:120529603	NM_024408.3	c.854G>A	p.Arg285His	483	0.39	III
LBCL-29	NOTCH2	chr1:120457987	NM_024408.3	c.7358G>A	p.Arg2453Gln	449	0.43	III
LBCL-29	NOTCH2	chr1:120458578	NM_024408.3	c.6767G>A	p.Arg2256His	547	0.44	III
LBCL-29	NOTCH2	chr1:120459214	NM_024408.3	c.6131G>A	p.Arg2044His	535	0.11	III
LBCL-29	NOTCH3	chr19:15276647	NM_000435.2	c.5618G>A	p.Arg1873His	510	0.46	III
LBCL-29	NOTCH3	chr19:15276230	NM_000435.2	c.5764G>T	p.Val1922Leu	479	0.49	III
LBCL-29	NOTCH3	chr19:15284979	NM_000435.2	c.4636C>T	p.Arg1546Cys	307	0.24	III
LBCL-29	NOTCH3	chr19:15298003	NM_000435.2	c.1753G>A	p.Glu585Lys	317	0.44	III
LBCL-29	NOTCH3	chr19:15303191	NM_000435.2	c.337C>T	p.Arg113Ter	335	0.47	III
LBCL-29	NOTCH3	chr19:15272206	NM_000435.2	c.6233G>A	p.Arg2078Gln	122	0.40	III
LBCL-29	ORAI1	chr12:122079194	NM_032790.3	c.557C>T	p.Thr186Met	569	0.47	III
LBCL-29	PDGFRA	chr4:55136826	NM_006206.4	c.1148G>A	p.Arg383His	291	0.39	III
LBCL-29	PDGFRA	chr4:55138642	NM_006206.4	c.1319C>T	p.Thr440Met	474	0.46	III
LBCL-29	PHIP	chr6:79707237	NM_017934.5	c.2095C>T	p.Arg699Trp	738	0.42	III
LBCL-29	PIK3CD	chr1:9775717	NM_005026.3	c.260G>A	p.Arg87Gln	496	0.45	III
LBCL-29	PIK3CD	chr1:9784908	NM_005026.3	c.2911G>A	p.Gly971Arg	597	0.46	III
LBCL-29	PRDM2	chr1:14108748	NM_012231.4	c.4467delA	p.Val1490PhefsTer74	485	0.27	III
LBCL-29	PTPN11	chr12:112939969	NM_002834.3	c.1621G>A	p.Glu541Lys	266	0.27	III
LBCL-29	RELN	chr7:103629674	NM_005045.3	c.130G>A	p.Gly44Arg	335	0.44	III
LBCL-29	RELN	chr7:103179594	NM_005045.3	c.7111G>A	p.Ala2371Thr	328	0.43	III
LBCL-29	RELN	chr7:103138557	NM_005045.3	c.8810C>T	p.Ala2937Val	434	0.44	III
LBCL-29	RELN	chr7:103124173	NM_005045.3	c.10108A>G	p.Thr3370Ala	570	0.50	III
LBCL-29	RUNX1	chr21:36164703	NM_001754.4	c.1172C>T	p.Ala391Val	578	0.39	III
LBCL-29	SETBP1	chr18:42643233	NM_015559.2	c.4361G>A	p.Arg1454His	760	0.20	III
LBCL-29	SETX	chr9:135205400	NM_015046.5	c.1585A>T	p.Asn529Tyr	434	0.38	III
LBCL-29	SETX	chr9:135205403	NM_015046.5	c.1582T>A	p.Ser528Thr	442	0.39	III
LBCL-29	SETX	chr9:135205246	NM_015046.5	c.1739A>T	p.Glu580Val	494	0.42	III
LBCL-29	SETX	chr9:135224734	NM_015046.5	c.82G>A	p.Gly28Ser	541	0.42	III
LBCL-29	SMARCA4	chr19:11107024	NM_001128846.1	c.1729G>A	p.Ala577Thr	396	0.44	III
LBCL-29	SMARCA4	chr19:11098465	NM_001128846.1	c.983C>T	p.Pro328Leu	282	0.44	III
LBCL-29	SMC1A	chrX:53438772	NM_006306.3	c.1193G>A	p.Arg398Gln	367	0.83	III

LBCL-29	SMC3	chr10:112335162	NM_005445.3	c.198+1G>A	.	486	0.42	III
LBCL-29	SYNE1	chr6:152786487	NM_182961.3	c.1838C>T	p.Ser613Phe	549	0.49	III
LBCL-29	SYNE1	chr6:152605247	NM_182961.3	c.18073G>A	p.Ala6025Thr	336	0.41	III
LBCL-29	SYNE1	chr6:152832196	NM_182961.3	c.352C>T	p.Arg118Ter	310	0.36	III
LBCL-29	SYNE1	chr6:152708320	NM_182961.3	c.8374C>T	p.Arg2792Cys	649	0.41	III
LBCL-29	TERT	chr5:1279431	NM_198253.2	c.2105C>T	p.Pro702Leu	318	0.38	III
LBCL-29	TERT	chr5:1293590	NM_198253.2	c.1411C>T	p.Arg471Trp	434	0.41	III
LBCL-29	WT1	chr11:32456710	NM_024426.4	c.182C>T	p.Ala61Val	139	0.45	III
LBCL-29	ZBTB7A	chr19:4054048	NM_015898.2	c.1183G>A	p.Gly395Ser	664	0.50	III
LBCL-29	ZBTB7A	chr19:4054414	NM_015898.2	c.817G>A	p.Gly273Ser	108	0.47	III
LBCL-29	ZBTB7A	chr19:4054972	NM_015898.2	c.259G>A	p.Ala87Thr	502	0.39	III
LBCL-29	ZFH3	chr16:72993326	NM_006885.3	c.718_719delinsCA	p.Ser240His	815	0.39	III
LBCL-29	ZFH3	chr16:72984838	NM_006885.3	c.2746C>T	p.Arg916Trp	372	0.37	III
LBCL-29	ZFH3	chr16:72991632	NM_006885.3	c.2413C>T	p.Arg805Trp	860	0.42	III
LBCL-29	ZFH3	chr16:72831834	NM_006885.3	c.4747G>A	p.Gly1583Ser	774	0.44	III
LBCL-29	ZFH3	chr16:72993738	NM_006885.3	c.307C>T	p.Arg103Cys	451	0.47	III
LBCL-30	ANK3	chr10:61835732	NM_020987.3	c.4907G>A	p.Arg1636Lys	581	0.13	III
LBCL-30	FAT4	chr4:126372379	NM_024582.4	c.10208T>C	p.Ile3403Thr	756	0.14	III
LBCL-30	IL7R	chr5:35871238	NM_002185.3	c.460C>T	p.His154Tyr	454	0.47	III
LBCL-30	KMT2C	chr7:151874709	NM_170606.2	c.7829G>A	p.Arg2610Gln	1064	0.12	III
LBCL-30	KMT2C	chr7:151882672	NM_170606.2	c.5052delA	p.Ala1685GlnfsTer32	1081	0.21	III
LBCL-30	MGA	chr15:42057239	NM_001164273.1	c.7900G>C	p.Gly2634Arg	884	0.11	III
LBCL-30	MGA	chr15:42028693	NM_001164273.1	c.4231A>G	p.Lys1411Glu	706	0.14	III
LBCL-30	PIK3C2A	chr11:17112920	NM_002645.2	c.4839A>C	p.Lys1613Asn	1536	0.12	III
LBCL-30	PTPRC	chr1:198672489	NM_002838.4	c.646A>C	p.Thr216Pro	817	0.44	III
LBCL-30	RELN	chr7:103191602	NM_005045.3	c.6214G>A	p.Glu2072Lys	657	0.49	III
LBCL-30	SYNE1	chr6:152658141	NM_182961.3	c.12362_12363delinsGT	p.Lys4121Ser	776	0.48	III
LBCL-30	SYNE1	chr6:152680580	NM_182961.3	c.10313A>T	p.Glu3438Val	642	0.47	III
LBCL-30	ZFH3	chr16:72827934	NM_006885.3	c.8647A>G	p.Met2883Val	885	0.49	III
LBCL-32	CBL	chr11:119149232	NM_005188.3	c.1240C>G	p.Gln414Glu	551	0.50	III
LBCL-32	CSF1R	chr5:149459839	NM_005211.3	c.368C>G	p.Ala123Gly	870	0.46	III
LBCL-32	KDM6A	chrX:44922694	NM_021140.2	c.1555C>G	p.Arg519Gly	676	0.45	III
LBCL-32	KIT	chr4:55570011	NM_000222.2	c.878A>G	p.Asn293Ser	377	0.48	III
LBCL-32	KMT2A	chr11:118307250	NM_001197104.1	c.23G>A	p.Arg8His	99	0.20	III
LBCL-32	KMT2C	chr7:151935907	NM_170606.2	c.2537C>T	p.Ala846Val	340	0.45	III
LBCL-32	ZFH3	chr16:72991696	NM_006885.3	c.2328_2348del	p.Val777_Ala783del	764	0.57	III

## **SUPPLEMENTAL METHODS**

### ***MYC testing***

MYC status for the LBCL (n=30) and BL (n=27) cohorts was determined using MYC IHC (Epitomics, clone Y69, 1:100). Fluorescence in situ hybridization (FISH) testing for *MYC* rearrangements (Vysis LSI *MYC* dual color break apart rearrangement probe, Abbott Molecular) was also performed on 27 LBCL and 22 BL.