

## Disease

## Gene Rearrangement

## Translocation

## Mutations

Recommended Primary Test

Recommended Secondary Test

IGH  
(V<sub>H</sub>-J<sub>H</sub>)

IGH  
(D<sub>H</sub>-J<sub>H</sub>)

IGK

IGL

IGHV  
SHM

TRB

TRD

TRG

IGH-  
BCL1  
(CCND1)

IGH-  
BCL2

BCR-  
ABL1\*

PML  
RARA\*

FLT3

NPM1

Lymphoid/ Lymphoma

Marginal Zone Lymphoma (MZL), extranodal<sup>12,13,27</sup>

88%

58%

84%

29%

23%

10%

16%

Marginal Zone Lymphoma (MZL), nodal<sup>13</sup>

100%

30%

80%

30%

10%

20%

10%

Mantle Cell Lymphoma (MCL)<sup>2,6,7,12,13,27,37</sup>

100%

11%

100%

44%

\*

9%

4%

11%

75%

Follicular Lymphoma (FL)<sup>3,7,12,13,27,28</sup>

84%

19%

84%

21%

6%

5%

2%

90%

Diffuse Large B-cell Lymphoma (DLBCL)<sup>3,12,13,27</sup>

80%

30%

80%

28%

21%

14%

15%

30%

Multiple Myeloma (MM) and other Plasma Cell Neoplasms (PCN)<sup>2,9,10,20,25</sup>

84%

60%

57%

97%

20%

Chronic Lymphocytic Leukemia (CLL)<sup>11,12,13,15,23,27,35</sup>

100%

43%

100%

30%

\*

25%

12%

18%

B-cell Acute Lymphoblastic Leukemia (B-ALL)<sup>4,12,14,19,21,22,27,29,30,31,32,33,34</sup>

96%

57%

95%

20%

81%

86%

75%

30%

Suspect B-cell Proliferations<sup>12,26,27,33</sup>

93%

93%

90%

40%

20%

20%

Peripheral T-cell Lymphoma (PTCL)<sup>12,13,14,24</sup>

35%

4%

2%

98%

94%

T-cell Acute Lymphoblastic Leukemia (T-ALL)<sup>12,14,21,22,29,31</sup>

24%

25%

4%

92%

68%

95%

Angioimmunoblastic T-cell Lymphoma (AITL)<sup>12,13,14</sup>

19%

11%

30%

5%

99%

35%

92%

Adult T-cell Leukemia/Lymphoma<sup>39</sup>

97%

96%

Anaplastic Large-Cell Lymphoma (ALCL)<sup>12,13,14</sup>

74%

12%

74%

T-cell Prolymphocytic Leukemia (T-PLL)<sup>12,13,14</sup>

3%

3%

3%

3%

100%

6%

94%

T-cell Large Granular Lymphocytic Leukemia (T-LGL Leukemia)<sup>12,13,14</sup>

4%

4%

97%

29%

96%

Suspect T-Cell Proliferations<sup>12,26,40</sup>

10%

10%

90%

11%

90%

Myeloid

Acute Myeloid Leukemia (AML)<sup>8,16</sup>

33%

64%

Acute Promyelocytic Leukemia (APL)<sup>1,5,16,17</sup>

90%

Chronic Myeloid Leukemia (CML)<sup>7,18,19,21,38</sup>

## PCR-based Ig/TCR Profiles with Combined Target Prevalence<sup>26</sup>

|                   | n = | IGH<br>(V <sub>H</sub> -J <sub>H</sub> ) | IGK  | IGH +<br>IGK | TCRB             | TCRG             | TCRB +<br>TCRG   |
|-------------------|-----|------------------------------------------|------|--------------|------------------|------------------|------------------|
| MCL               | 54  | 100%                                     | 100% | 100%         | 9%               | 11%              | NE               |
| CLL/SLL           | 56  | 100%                                     | 100% | 100%         | 25%              | 18%              | NE               |
| FL                | 109 | 86%                                      | 84%  | 100%         | 6%               | 2%               | NE               |
| MZL*              | 41  | 95%                                      | 83%  | 100%         | 24%              | 15%              | NE               |
| DLBCL             | 109 | 85%                                      | 80%  | 98%          | 21%              | 15%              | NE               |
| T-PLL             | 33  | 9%                                       | 3%   | NE           | 100%             | 94%              | 100%             |
| T-LGL             | 28  | 0%                                       | 4%   | NE           | 96%              | 96%              | 100%             |
| PTCL-NOS          | 47  | 9%                                       | 2%   | NE           | 98%              | 94%              | 100%             |
| AIT               | 37  | 30%                                      | 19%  | NE           | 89%              | 92%              | 95%              |
| ALCL <sup>‡</sup> | 43  | 2%                                       | 0%   | NE           | 74% <sup>‡</sup> | 74% <sup>‡</sup> | 79% <sup>‡</sup> |

\*MZL comprises both extranodal (31) and nodal (10) cases.

<sup>‡</sup>The lower percentages in ALCL are partly caused by a series of nine null-type ALCL without any TCR gene rearrangements.

### References

- Kakizuka, A et al. (1991) *Cell*, 66:675–684.
- Rimokh, R et al. (1994) *Blood*, 83:1871–1875.
- Gribben, JG et al. (1994) *Blood*, 83:3800–3807.
- Radich, JP et al. (1994) *Leukemia*, 8:1688–1695.
- Gallagher, RE et al. (1995) *Blood*, 86:1540–1547.
- De Boer, CJ et al. (1995) *Blood*, 86:2715–2723.
- Deininger, MW et al. (2000) *Blood*, 96:3343–56.
- Schlenk RF et al. (2008) *N Engl J Med*, 358:1909–1918.
- Gonzalez, D et al. (2003) *Leukemia*, 17:1051–1057.
- Gonzalez, D et al. (2003) *Leukemia*, 17:1398–1403.
- Ghia, P et al. (2007) *Leukemia*, 21:1–3.
- van Krieken, JH et al. (2007) *Leukemia*, 21:201–6.
- Evans, PAS et al. (2007) *Leukemia*, 21:207–214.
- Bruggemann, M et al. (2007) *Leukemia*, 21:215–221.
- Davi, F et al. (2008) *Leukemia*, 22:212–214.
- Döhner, H et al. (2010) *Blood*, 115:453–474.
- Huang, W et al. (1993) *Blood*, 82:1264–1269.
- Hughes, T et al. (2006) *Blood*, 108:28–37.
- Westbrook, CA et al. (1992) *Blood*, 80:2983–2990.
- Ralph, QM et al. (1993) *Blood*, 82:202–20.
- Juárez-Velázquez, MR et al. (2013) *Clinical Epidemiology of Acute Lymphoblastic Leukemia - From the Molecules to the Clinic*, 193–235.
- Raimondi, S. (2007) *Atlas Genet Cytogenet Oncol Haematol*, 11(4):328–339.
- Vardi, A et al. (2015) *Clin Cancer Res*, 22(1):167–174.
- Tan, BT et al. (2008) *J Mol Diag*, 10(6):502–512.
- González, D et al. (2007) *Blood*, 110:3112–3121.
- Langerak AW et al. (2007) *Exp Opin Med Diag*, 1(4):451–461.
- Arcila, ME et al. (2019) *J Mol Diag*, 2: 330–341.
- Campo, E et al. (2011) *Blood*, 117(19): 5019–5032.
- Smirnova, SY et al. (2016) *Acta naturae*, 8(4):100–109.
- Szczepanski, T et al. (2001) *Leukemia*, 15:1415–1423.
- Szczepanski, T et al. (1998) *Leukemia*, 12:1081–1088.
- Beishuizen, A et al. (1994) *Leukemia*, 8(12):2228–36.
- Tümkeya T et al. (2001) *Leukemia*, 15:121–127.
- Felix, CA et al. (1990) *J Clin Oncol*, 8(3):431–42.
- Rosenquist R et al. (2017) *Leukemia*, 31:1477–1481.
- Arons, E et al. (2011) *Blood*, 117(18): 4844–4851.
- Lai, R et al. (2006) *Modern Pathology*, 19:1498–1505.
- Srour SA et al. (2017) *Br J Haematol*, 177(2): 331.
- Ohshima, K et al. (1990) *Hematol Oncol*, 8(2):111–8.
- van Dongen, JJM et al. (2003) *Leukemia*, 17, 2257–2317.

M-0017 Rev02 July 2020

Invivoscribe® is dedicated to Improving Lives with Precision Diagnostics® worldwide by providing high quality, reliable, cutting-edge tools for molecular biology and molecular diagnostics.

### IdentiClone® Assays Gel/ABI

- » CE-IVD
- » BIOMED-2 design
- » Assays for B- and T-cell clonality assessment & Somatic Hypermutation (SHM) Assay
- » High sensitivity
- » Design supports low or high throughput
- » Easy interpretation

### LymphoTrack® Dx Assays NGS

- » CE-IVD
- » One-step PCR for library generation
- » Identify, track, and assess mutation status of B- and T-cell gene rearrangements
- » Sequence amplicons from any LymphoTrack Dx kit together
- » Available for Illumina® MiSeq® and Thermo Fisher Scientific® Ion S5™ and PGM™ platforms
- » Bioinformatics software included for easy analysis and interpretation

invivoscribe.com | Tel +1 858.224.6600 | Fax +1 858.224.6601 | Email marketing@invivoscribe.com | 10222 Barnes Canyon Road, Bldg. 1 | San Diego, CA 92121