# Disturbed expression of the T-cell receptor/CD3 complex and associated signaling molecules in CD30 ${ }^{+}$-cell lymphoproliferations 

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Online Supplementary Table S1. Sources and dilutions of primary antibodies.

| Anthody | Clone | Source | Dilution | Pretreatment |
| :---: | :---: | :---: | :---: | :---: |
| CD30 | BerH2 | Dako | 1:80 | CApH 6.0 |
| ALK1 | ALK1 | Dako | 1:80 | CApH 6.0 |
| TcRa/ $\beta$ | 8A3 | Endogen | 1:40 | TR |
| CD38 | PS1 | Novocastra | 1:80 | CApH 6.0 |
| CD3 | C-20 | Santa Cruz | 1:200 | CApH 6.0 |
| CD38 | M-20 | Santa Cruz | 1:200 | CApH 6.0 |
| CD35 | $6 \mathrm{B10} 2$ | Santa Cruz | 1:1000 | CApH 6.0 |
| vLAT | FL-233 | Santa Cruz | 1:300 | TR |
| ZAP-70 | 2 F 3.2 | Upstate | 1:800 | CApH 7.0 |
| NFATcl | 7A6 | BD | 1:400 | TR |
| bcl-10 | 151 | Zymed | 1:200 | CApH 6.0 |
| CARD11 (CARMA1) | Rabbit polyclonal | Lifespan Biosciences | 1:400 | CApH 6.0 |
| Lck | Y123 | Epitomics | 1:200 | CApH 6.0 |
| Syk | EP573Y | Epitomics | 1:400 | CApH 6.0 |
| ATF1 | 25C10G | Santa Cruz | 1:200 | CApH 6.0 |
| ATF2 | C-19 | Santa Cruz | 1:100 | CApH 6.0 |
| TCF-1 | A-79 | Santa Cruz | 1:100 | TR |
| Lef-1 (TcF-1 $\alpha$ ) | EPR2029Y | Epitomics | 1:100 | CApH 6.0 |
| Ets-1 | $1 \mathrm{Gl1}$ | Santa Cruz | 1:100 | TR |
| c-Jun | H-79 | Santa Cruz | 1:300 | CApH 6.0 |
| c-Fos | K-25 | Santa Cruz | 1:1000 | CApH 6.0 |

Immunohistochemical staining with Advance ${ }^{T M}$ HRP detection kit (K4068) from Dako. BD Bioscience, Heidelberg, Germany; Dako, Hamburg, Germany; Endogen, Woburn, MA USA; Epitomics, Burlingame, CA USA; Lifespan Biosciences, Seattle, WA USA; Monosan, AM Uden, the Netherlands; Novocastra, Newcastle upon Tyne, UK; Santa Cruz, Santa Cruz, California USA; Upstate, Temecula, CA USA; Zymed, South San Francisco, CA USA. Pretreatment: CA: citric acid, TR: target retrieval, S1699, Dako, Hamburg, Germany.

Online Supplementary Table S2. Immunohistochemical staining results of transcription factors regulating TCR expression and TCR/CD3 complex-associated signaling molecules. $P$ values are given for comparison of the different disease groups as $A=$ the entire group of primary cutaneous CD30 ${ }^{+}$Tcell lymphoproliferative disorders $(n=19), B 1=A L K$ systemic ALCL $(n=38), B 2=A L K+$ systemic ALCL $(n=33), B=$ the entire group of systemic ALCL $(\mathrm{n}=71), C=$ PTCL-NOS $(\mathrm{n}=20)$. Significant $P$ values are displayed in italics. $P$ values comparing A1 $=$ lymphomatoid papulosis $(\mathrm{n}=9)$ and A2 $=$ cutaneous ALCL ( $n=10$ ) were not significant for any marker and are not, therefore, detailed. For some markers (ATF-1, TCF-1 $\alpha /$ LEF-1, Lck, c-Jun, and c -Fos) fewer cases were evaluable (numbers are indicated in brackets) than reported above due to limited material. The staining results were reported semi-quantitatively (see Design and Methods section) and the percentage of cases is indicated. LyP, lymphomatoid papulosis; sALCL, systemic ALCL; cALCL, cutaneous ALCL.

| Gases | Staining intensities |  |  |  | $P$ values |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0 | 1 | 2 | 3 |  |
| ATF-1 |  |  |  |  |  |
| LyP ( $\mathrm{n}=8$ ) | 0 | 0 | 2 (25\%) | 6 (75\%) | AB: $P=0.027$ |
| cALCL | 0 | 0 | 1 (10\%) | 9 (90\%) | $\mathrm{B1} / \mathrm{B2}: P=0.459$ |
| sALCL ALK- | 0 | 0 | 16 (42\%) | 22 (58\%) | $\mathrm{Bl} / \mathrm{C}: P<0.001$ |
| sALCL ALK+ | 0 | 2 (6\%) | 14 (42\%) | 17 (52\%) | $\mathrm{B} 2 / \mathrm{C}: P=0.011$ |
| PTCL-NOS | 0 | 0 | 18 (90\%) | 2 (10\%) | $\mathrm{B} / \mathrm{C}: P=0.001$ |
| ATF-2 |  |  |  |  |  |
| LyP | 0 | 0 | 0 | 9 (100\%) | AB: $P=0.104$ |
| cALCL | 0 | 0 | 0 | 10 (100\%) | $\mathrm{B1} / \mathrm{B2}: P=0.197$ |
| sALCL ALK- | 0 | 0 | 3 (8\%) | 35 (92\%) | $\mathrm{B1} / \mathrm{C}: P<0.001$ |
| sALCL ALK+ | 0 | 0 | 6 (18\%) | 27 (82\%) | $\mathrm{B} 2 / \mathrm{C}: P=0.001$ |
| PTCL-NOS | 0 | 0 | 14 (70\%) | 6 (30\%) | $B / C: P<0.001$ |
| TCF-1 |  |  |  |  |  |
| LyP | 7 (78\%) | 1 (11\%) | 1 (11\%) | 0 | A $/$ B: $P=0.617$ |
| cALCL | 5 (50\%) | 3 (30\%) | 2 (20\%) | 0 | B1/B2: $P<0.001$ |
| sALCL ALK- | 12 (32\%)* | 17 (45\%)* | 5 (13\%)* | 4 (11\%)* | $\mathrm{B1} / \mathrm{C}: P<0.001$ |
| sALCL ALK+ | 27 (82\%) | 6 (18\%) | 0 | 0 | $\mathrm{B} 2 / \mathrm{C}: P<0.001$ |
| PTCL-NOS | 0 | 0 | 19 (95\%) | 1 (5\%) | $B / C: P<0.001$ |
| TCF-1o/LEF-1 |  |  |  |  |  |
| LyP | 6 (67\%) | 1 (11\%) | 2 (22\%) | 0 | AB: $P=0.195$ |
| cALCL ( $\mathrm{n}=9$ ) | 3 (33\%)* | 2 (22\%)* | 1 (11\%)* | 3 (33\%)* | B1/B2: $P<0.001$ |
| sALCL ALK- | 15 (39\%) | 9 (24\%) | 6 (16\%) | 8 (21\%) | $\mathrm{B1} / \mathrm{C}: P=0.002$ |
| sALCL ALK+ | 32 (97\%) | 1 (3\%) | 0 | 0 | B2/C: $P<0.001$ |
| PTCL-NOS | 1 (5\%) | 1 (5\%) | 12 (60\%) | 6 (30\%) | $\mathrm{B} / \mathrm{C}: P<0.001$ |
| Ets-1 |  |  |  |  |  |
| LyP | 0 | 0 | 4 (44\%) | 5 (56\%) | A/B: $p<0.001$ |
| cALCL | 0 | 2 (20\%) | 4 (40\%) | 4 (40\%) | $\mathrm{B1} / \mathrm{B2} 2: P=0.947$ |
| sALCL ALK- | 6 (16\%) | 12 (32\%) | 15 (39\%) | 5 (13\%) | $\mathrm{Bl} / \mathrm{C}: P=0.170$ |
| sALCL ALK+ | 3 (9\%)* | 15 (45\%)* | 10 (30\%)* | 5 (15\%)* | $\mathrm{B} 2 / \mathrm{C}: P=0.119$ |
| PTCL-NOS | 1 (5\%) | 4 (20\%) | 14 (70\%) | $1(5 \%)$ | $\mathrm{B} / \mathrm{C}: P=0.111$ |
| LAT |  |  |  |  |  |
| ${ }_{\text {chP }}$ calcl | $4(44 \%) *$ | 4 (44\%)* | 1 (11\%)* | 0 | AB: $P=0.964$ $\mathrm{Bl} / \mathrm{B} \cdot$ |
| sALCL ALK- | 19 (50\%) | 16 (42\%) | 3 (8\%) | 0 | B1/C: $P<0.001$ |
| sALCL ALK+ | 18 (55\%) | 14 (42\%) | 1 (3\%) | 0 | B2/C: $P<0.001$ |
| PTCL-NOS | 0 | 0 | 12 (60\%) | 8 (40\%) | $\mathrm{B} / \mathrm{C}: P<0.001$ |
| ZAP-70 |  |  |  |  |  |
| LyP | 1 (11\%) | 0 | 6 (67\%) | 2 (22\%) | A/B: $P=0.004$ |
| cALCL | 0 | 2 (20\%) | 4 (40\%) | 4 (40\%) | B1/B2: $P=0.139$ |
| sALCL ALK- | 9 (24\%) | 8 (21\%) | 14 (37\%) | 7 (18\%) | $\mathrm{B1} / \mathrm{C}: P=0.004$ |
| sALCL ALK+ | 13 (39\%)* | 6 (18\%)* | 11 (33\%)* | 3 (9\%)* | B2/C: $P<0.001$ |
| PTCL-NOS | 1 (5\%) | 0 | 10 (50\%) | 9 (45\%) | $B / C: P<0.001$ |
| Syk |  |  |  |  |  |
| LyP | 6 (67\%) | 1 (11\%) | 0 | 2 (22\%) | AB: $P=0.348$ |
| cALCL ( $\mathrm{n}=9$ ) | 6 (67\%) | 3 (33\%) | 0 | 0 | $\mathrm{B1} / \mathrm{B2} 2: P=0.006$ |
| sALCL ALK- | 27 (71\%) | 4 (11\%) | 7 (18\%) | 0 | $\mathrm{B1} / \mathrm{C}: P=0.008$ |
| sALCL ALK+ | 12 (36\%)* | 9 (27\%)* | 11 (33\%)* | 1 (3\%)* | B2/C: $P<0.001$ |
| PTCL-NOS | 20 (100\%) | 0 | 0 | 0 | $B / C: P<0.001$ |
| NFATc1 |  |  |  |  |  |
| LyP | 2 (22\%)* | 1 (11\%)* | 3 (33\%)* | 3 (33\%)* | A $/$ B $P=0.001$ |
| cALCL | 2 (20\%) | 3 (30\%) | 1 (10\%) | 4 (40\%) | B1/B2: $P=0.126$ |
| sALCL ALK- | 15 (39\%)* | 14 (37\%)* | 7 (18\%)* | 2 (5\%)* | $\mathrm{B1} / \mathrm{C}: P<0.001$ |
| sALCL ALK+ | 17 (52\%) | 14 (42\%) | 1 (3\%) | 1 (3\%) | B2/C: $P<0.001$ |
| PTCL-NOS | 0 | 1 (5\%) | 9 (45\%) | 10 (50\%) | $\mathrm{B} / \mathrm{C}: P<0.001$ |
| bcl-10 |  |  |  |  |  |
| LyP | 0 | 1 (11\%) | 7 (78\%) | 1 (11\%) | AB: $P=0.015$ |
| cALCL | 1 (10\%) | 0 | 5 (50\%) | 4 (40\%) | $\mathrm{B1} / \mathrm{B2}: P=0.005$ |
| sALCL ALK- | 4 (11\%) | 5 (13\%) | 22 (58\%) | 7 (18\%) | $\mathrm{Bl} / \mathrm{C}: P=0.456$ |
| sALCL ALK+ | 6 (18\%)* | 12 (36\%)* | 14 (42\%)* | 1 (3\%)* | $\mathrm{B} 2 / \mathrm{C}: P=0.025$ |
| PTCL-NOS | $1(5 \%)$ | 3 (15\%) | 16 (80\%) | 0 | $\mathrm{B} / \mathrm{C}: P=0.450$ |


| Carmal |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| LyP | 0 | 0 | 5 (56\%) | 4 (44\%) | AB: $P<0.001$ |
| cALCL | 0 | 0 | 4 (40\%) | 6 (60\%) | B1/B2: $P=0.582$ |
| sALCL ALK- | 2 (5\%) | 5 (13\%) | 27 (71\%) | 4 (11\%) | B1/C: $P=0.221$ |
| sALCL ALK+ | 2 (6\%) | 6 (18\%) | 22 (67\%) | 3 (9\%) | B2/C: $P=0.109$ |
| PTCL-NOS | 0 | 2 (10\%) | 15 (75\%) | 3 (15\%) | $\mathrm{B} / \mathrm{C}: P=0.120$ |
| Lck |  |  |  |  |  |
| LyP ( $\mathrm{n}=8$ ) | 4 (50\%)* | 0 | 3 (38\%)* | 1 (11\%)* | AB: $P<0.001$ |
| cALCL | 7 (70\%) | 1 (10\%) | 2 (20\%) | 0 | B1/B2: $P=0.102$ |
| sALCL ALK- | 35 (92\%) | 2 (5\%) | 1 (3\%) | 0 | $\mathrm{Bl} / \mathrm{C}: P<0.001$ |
| sALCL ALK+ | 33 (100\%) | 0 | , | 0 | B2/C: $P<0.001$ |
| PTCL-NOS | 0 | 1 (5\%) | 5 (25\%) | 14 (70\%) | B/C: $P<0.001$ |
| $c$-Jun |  |  |  |  |  |
| LyP ( $\mathrm{n}=7$ ) | 0 | 2 (29\%) | 4 (57\%) | 1 (14\%) | A/B: $P=0.387$ |
| cALCL ( $\mathrm{n}=9$ ) | 1 (11\%)* | 4 (44\%)* | 4 (44\%)* | 0 | AB: $P=0.387$ |
| sALCL ALK- ( $\mathrm{n}=36$ ) | 7 (19\%)* | 12 (33\%)* | 7 (19\%)* | 10 (28\%)* | B1/B2: $P=0.070$ |
| sALCL ALK+ | $2(6 \%)^{*}$ | 6 (18\%)* | 15 (45\%)* | 10 (30\%)* | B1/C: $P<0.001$ |
| PTCL-NOS ( $\mathrm{n}=12$ ) | 12 (100\%) | 0 | , | 0 | B2/C: $P<0.001$ |
| c-Fos |  |  |  |  |  |
| LyP ( $\mathrm{n}=7$ ) | 1 (14\%)* | 1 (14\%)* | 1 (14\%)* | 4 (57\%)* | AB: $P=0.026$ |
| cALCL ( $\mathrm{n}=9$ ) | 3 (33\%) | 5 (56\%) | 0 | 1 (11\%) | $\mathrm{B1} / \mathrm{B2} 2: P<0.001$ |
| sALCL ALK- ( $\mathrm{n}=36$ ) | 12 (33\%) | 5 (14\%) | 8 (22\%) | 11 (31\%) | $\mathrm{B1} / \mathrm{C}: P<0.001$ |
| sALCL ALK+ | 0 | 0 | 2 (6\%) | 31 (94\%) | B2/C: $P<0.001$ |
| PTCL-NOS ( $\mathrm{n}=12$ ) | 12 (100\%) | 0 | - | 0 | $\mathrm{B} / \mathrm{C}: P<0.001$ |

*Sum of percentages does not equal $100 \%$ due to rounding effects.

Online Supplementary Table S3. Complete raw data including the results of all stains in all cases (Case No = internal case numbers, Dx1 = Diagnostic group for statistical analysis, Dx2 = Diagnosis according to the World Health Organization classification, Dx3 = subgroup of the primary cutaneous CD30+ lymphoproliferative disorders; $\mathrm{c}=$ cytoplasmic, $\mathrm{G}=$ Golgi complex/endoplasmic reticulum, $\mathrm{m}=\mathrm{membra}$ nous staining pattern, n.d. = not done due to limited material. LyP, lymphomatoid papulosis; sALCL, systemic ALCL; cALCL, cutaneous ALCL.

| $\begin{aligned} & \text { Case } \\ & \text { No } \\ & \hline \end{aligned}$ | Dx1 | Dx2 | Dx3 | ALK | $\begin{aligned} & \text { ATF- } \\ & 1 \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { ATF- } \\ & 2 \\ & \hline \end{aligned}$ | TCF- | $\begin{aligned} & \text { LEF- } \\ & 1 \end{aligned}$ | $\begin{aligned} & \text { Ets- } \\ & 1 \end{aligned}$ | TCR $\beta$ | CD3 $\gamma$ | CD3E | CD38 | CD35 | LAT | $\begin{aligned} & \text { ZAP- } \\ & 70 \\ & \hline \end{aligned}$ | Syk | Lck | NFATc1 | cFos | $\begin{aligned} & \text { c- } \\ & \text { Jun } \end{aligned}$ | bcl10 | CARMA1 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A1 | A1 | Lyp | A |  | 3 | 3 | 0 | 0 | 3 | 0 | 2c | 2c | 1c | 1c | 1 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 |
| A2 | A1 | Lyp | A |  | 3 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 c | 0 | 2 | 0 | 0 | 1 | 3 | 2 | 2 | 2 |
| A3 | A1 | Lyp | A |  | 3 | 3 | 0 | 0 | 2 | 1c | 2c | 2c | 2c | 1c | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 3 |
| A4 | A1 | Lyp | A |  | 3 | 3 | 1 | 2 | 2 | 2c | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 2 |
| A5 | A1 | Lyp | A |  | 3 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1c | 0 | 2 | 3 | 0 | 0 | 3 | 1 | 2 | 2 |
| A6 | A1 | Lyp | A |  | n.d. | 3 | 0 | 0 | 3 | 2c | 1 c | 2 cm | 2 c | 1 c | 1 | 2 | 0 | n.d. | 2 | n.d. | n.d. | 1 | 2 |
| A7 | A1 | Lyp | A |  | 2 | 3 | 0 | 1 | 3 | 0 | 0 | 0 | 1 c | 1 c | 1 | 2 | 0 | 0 | 2 | 3 | 2 | 2 | 2 |
| A8 | A1 | Lyp | C |  | 2 | 3 | 0 | 0 | 3 | 1c | 0 | 1c | 1c | 1 c | 1 | 3 | 1 | 2 | 3 | 1 | 1 | 2 | 3 |
| A9 | A1 | Lyp | C |  | 3 | 3 | 2 | 2 | 2 | 1c | 1c | 3c | 1c | 1 c | 0 | 3 | 0 | 2 | 3 | n.d. | n.d. | 3 | 3 |
|  |  |  | Lyp- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | A2 | cALCL | like Lyp- |  | 3 | 3 | 0 | 0 | 2 | 1c | 0 | 1c | 0 | 2 c | 2 | 3 | 1 | 0 | 3 | 1 | 2 | 2 | 3 |
| A11 | A2 | cALCL | like |  | 3 | 3 | 0 | n.d. | 2 | 1c | 1 c | 1c | 1c | 1c | 0 | 2 | n.d. | 0 | 1 | 2 |  | 2 | 2 |
| A12 | A2 | cALCL | Lyplike |  | 3 | 3 | 0 | 0 | 3 | 0 | 1c | 1c | 2c | 1c | 0 | 2 | 0 | 2 | 1 | 1 | 1 | 2 | 3 |
|  |  |  | Lyp- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A13 | A2 | cALCL | like |  | 3 | 3 | 1 | 1 | 2 | 2c | 3c | 3c | 3c | 2 cm | 2 | 1 | 0 | 2 | 1 | 3 | 2 | 2 | 3 |
| A14 | A2 | cALCL |  |  | 2 | 3 | 2 | 3 | 3 | 0 | 1 c | 2 cm | 2 c | 0 | 1 | 2 | 1 | 1 | 3 | 1 | 2 | 3 | 3 |
| A15 | A2 | cALCL |  |  | 3 | 3 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 3 | 2 |
| A16 | A2 | cALCL |  |  | 3 | 3 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 1 c | 0 | 3 | 0 | 0 | 3 | 1 | 1 | 3 | 3 |
| A17 | A2 | cALCL |  |  | 3 | 3 | 0 | 0 | 2 | 1c | 0 | 0 | 0 | 1c | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 3 |
| A18 | A2 | cALCL |  |  | 3 | 3 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 3 | 2 |
| A19 | A2 | cALCL |  |  | 3 | 3 | 2 | 3 | 3 | 2c | 2c | 3c | 2 c | 2 c | 0 | 3 | 0 | 0 | 3 | 0 | 2 | 2 | 2 |
| B1 | B1 | sALCL |  | ALK- | 3 | 3 | 0 | 1 | 1 | 1c | 3c | 3c | 3c | 1 c | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| B2 | B1 | sALCL |  | ALK- | 2 | 3 | 3 | 1 | 3 | 2 c | 0 | 2c | 0 | 3c | 1 | 3 | 0 | 0 | 0 | 3 | 2 | 2 | 3 |
| B3 | B1 | sALCL |  | ALK- | 2 | 3 | 1 | 0 | 3 | 1c | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 3 | 3 | 0 | 2 |
| B4 | B1 | sALCL |  | ALK- | 2 | 3 | 1 | 1 | 2 | 2c | 1cG | 0 | 1cG | 3c | 0 | 3 | 2 | 0 | 0 | 2 | 2 | 2 | 2 |
| B5 | B1 | sALCL |  | ALK- | 2 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 c | 1 | 1 | 2 | 0 | 1 | 3 | 1 | 1 | 2 |
| B6 | B1 | sALCL |  | ALK- | 3 | 3 | 1 | 0 | 1 | 1c | 0 | 2G | 2c | 1 c | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 2 |
| B7 | B1 | sALCL |  | ALK- | 3 | 3 | 0 | 0 | 2 | 1c | 1c | 1c | 1c | 2 c | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 2 |
| B8 | B1 | sALCL |  | ALK- | 3 | 3 | 1 | 0 | 0 | 0 | 1c | 0 | 1c | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| B9 | B1 | sALCL |  | ALK- | 2 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 2 |
| B10 | B1 | sALCL |  | ALK- | 2 | 3 | 1 | 3 | 3 | 0 | 3c | 3c | 3c | 2 c | 0 | 2 | 0 | 2 | 3 | 0 | 0 | 1 | 2 |
| B11 | B1 | sALCL |  | ALK- | 3 | 3 | 1 | 2 | 0 | 0 | 1c | 2 C | 2c | 1G | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 2 |
| B12 | B1 | sALCL |  | ALK- | 3 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 3 | 0 | 3 |
| B13 | B1 | sALCL |  | ALK- | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 2 |
| B14 | B1 | sALCL |  | ALK- | 2 | 3 | 0 | 0 | 1 | 2c | 0 | 0 | 0 | 2c | 2 | 1 | 2 | 0 | 0 | 3 | 3 | 2 | 3 |
| B15 | B1 | sALCL |  | ALK- | 3 | 3 | 0 | 0 | 1 | 1c | 0 | 0 | 1c | 3c | 2 | 2 | 1 | 0 | 1 | 2 | 2 | 2 | 1 |
| B16 | B1 | sALCL |  | ALK- | 2 | 3 | 1 | 2 | 1 | 1c | 0 | 1c | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 1 | 2 | 1 |
| B17 | B1 | sALCL |  | ALK- | 3 | 3 | 0 | 0 | 2 | n.d. | 0 | 0 | 0 | 1c | 1 | 0 | 0 | 0 | 1 | 3 | 1 | 2 | 2 |
| B18 | B1 | sALCL |  | ALK- | 3 | 3 | 2 | 2 | 0 | 1 c | 0 | 0 | 0 | 1 c | 0 | 3 | 1 | 0 | 3 | 3 | 3 | 2 | 0 |
| B19 | B1 | sALCL |  | ALK- | 3 | 3 | 3 | 3 | 2 | 2c | 3 c | 1 cm | 2 c | 2c | 0 | 3 | 0 | 1 | 1 | 0 | 1 | 3 | 2 |
| B20 | B1 | sALCL |  | ALK- | 2 | 3 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 2 |
| B21 | B1 | sALCL |  | ALK- | 3 | 3 | 2 | 2 | 3 | 0 | 0 | 2 cm | 1c | 1c | 2 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 2 |
| B22 | B1 | sALCL |  | ALK- | 3 | 3 | 3 | 3 | 1 | 0 | 3c | 3 cm | 2c | 2G | 0 | 2 | 0 | 0 | 1 | 0 | 2 | 2 | 2 |
| B23 | B1 | SALCL |  | ALK- | 2 | 3 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 3 | 3 | 2 |
| B24 | B1 | sALCL |  | ALK- | 3 | 3 | 0 | 0 | 2 | 1c | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 1 | 2 | 0 |
| B25 | B1 | sALCL |  | ALK- | 3 | 3 | 1 | 1 | 1 | 1c | 0 | 0 | 1c | 1c | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 2 |
| B26 | B1 | sALCL |  | ALK- | 2 | 2 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1c | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 3 | 2 |
| B27 | B1 | sALCL |  | ALK- | 3 | 3 | 1 | 1 | 1 | 0 | 2c | 3c | 1c | 0 | 1 | 1 | 1 | 0 | 2 | 2 | 2 | 3 | 2 |
| B28 | B1 | sALCL |  | ALK- | 3 | 3 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 1G | 0 | 3 | 0 | 0 | 1 | 2 | 2 | 3 | 1 |
| B29 | B1 | sALCL |  | ALK- | 3 | 3 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 1 |





 $N \rightarrow N \rightarrow O N \rightarrow N N N W N N N N N N N N N \rightarrow \rightarrow N \rightarrow \omega \omega N N N \rightarrow N N N \omega \rightarrow O \rightarrow 0 \omega \rightarrow N \rightarrow \rightarrow-0 \rightarrow-\rightarrow-\omega N N \rightarrow N \rightarrow \rightarrow-N \rightarrow N N$




NNN－$-\omega N \rightarrow \omega N \omega N N N N N N W N N O \vec{O}$

 $000 N O O O O O R-N N O N O O N O R N T$ FONORNNONOORTNNORNOOOOOOOOOOOOOOOOOO 000000000000000000000000000000000000000000 mmmmmmNmmNNmmmmNNNmm
 mmorNmoormmmmmmmmmmmNmmmmmmmmmmmmmmmmmNmmmoo

$N N \rightarrow N O-N N \rightarrow N N N N N N N N N N N N \rightarrow O O N N N \rightarrow-O N N N \omega \rightarrow-N N N O \rightarrow \rightarrow N N \rightarrow \rightarrow-N \rightarrow N O \rightarrow O \rightarrow N N N N G N \rightarrow N$
－NNMNNNNNNNNMNNNNONTーMNMNNーNNNNNーOーNNNーNNNーNNNNNNNNNMNMMNNNーNM

