

**DUSP22-rearranged anaplastic lymphomas are characterized by specific morphological features and a lack of cytotoxic and JAK/STAT surrogate markers**

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### **Supplementary data**

Immunohistochemistry was performed on 3- $\mu$ m paraffin sections using the Envision method (Dako, Glostrup, Denmark) on an automated immunostainer (Dako), using a panel of antibodies against ALK (ALK-1, RTU; Dako), CD3 (rabbit polyclonal, RTU; Dako), CD4 (4B12, RTU; Dako), CD8 (C8/144B, RTU; Dako), CD30 (Ber-H2, RTU; Dako), granzyme B (GRB7, 1/25, Dako), MUM1 (RTU, Dako), perforin (5B10, 1/10, Thermo Fisher Scientific), P-STAT3 (D3A7, 1/400 Cell Signaling), TIA1 (TA-1, 1/50, Abcam), P-STAT5 (D2A37, 1/200, Cell Signaling), TCR- $\beta$ F1 (8A3, 1/40 dilution; Thermo Scientific), P63 (RTU, Dako), STAT3 (F-2, 1/100, Santa Cruz Biotechnology)

Cytotoxic markers were evaluated by measuring the percentage of positive tumoral cells, taking 25% of positive neoplastic cells to be the threshold. A cytotoxic phenotype was ascribed when two of the three cytotoxic markers were positive, or when only one of them was positive in >75% of tumoral cells. MUM 1 was considered positive when expressed in >25% of tumoral cells(1); the cut-off value for p63 positivity was 30%, as proposed by another group(2).

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2. Parrilla Castellar ER, Jaffe ES, Said JW, Swerdlow SH, Ketterling RP, Knudson RA, et al. ALK-negative anaplastic large cell lymphoma is a genetically heterogeneous disease with widely disparate clinical outcomes. *Blood.* 2014 Aug;124(9):1473-80.