Leukaemia Section
Short Communication

t(2;19)(p23;p13) TPM4/ALK

Jean-Loup Huret
Genetics, Dept Medical Information, University of Poitiers, CHU Poitiers Hospital, F-86021 Poitiers, France (JLH)

Published in Atlas Database: January 2013
Online updated version: http://AtlasGeneticsOncology.org/Anomalies/t0219p23p13ID1549.html
DOI: 10.4267/2042/49704

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 2.0 France Licence.
© 2013 Atlas of Genetics and Cytogenetics in Oncology and Haematology

Clinics and pathology

\textbf{Disease}
Anaplastic large cell lymphoma (ALCL)

\textbf{Clinics}
Only one case to date, an 18-month-old boy with a null-ALCL (Meech et al., 2001).

\textbf{Cytology}
Cells expressed both myeloid (CD13, CD33, HLA-DR) and natural killer (CD3-/CD56+, germline TCR genes, CD25+/CD122+/granzyme B+) cell antigens.

\textbf{Evolution}
The patient was in remission 14 months after completion of therapy.

Cytenogenetics

\textbf{Cytenogenetics morphological}
To be noted is that an identical t(2;19)(p23;p13), also involving TPM4 and ALK, has been found in a case of inflammatory myofibroblastic tumor (Lawrence et al., 2000).
A pre-B cell acute leukemia was described with a t(9;12)(q22;p13) and ETV6 rearrangement, and also a t(2;19)(p23;p13) (Pérez-Vera et al., 2005).
It is likely that this translocation t(2;19)(p23;p13) is different at the molecular level.

\textbf{Genes involved and proteins}

\textbf{ALK}
Location 2p23.2
Protein 1620 amino acids; ALK is a membrane associated tyrosine kinase receptor of the insulin receptor superfamily.

\textbf{TPM4}
Location 19p13.12
Protein 248 amino acids; tropomyosins are actin-binding proteins; component of cytoskeletal microfilaments; role in the calcium dependent regulation of striated muscle.

\textbf{Result of the chromosomal anomaly}

\textbf{Hybrid gene}
Description
5'TPM4-3'ALK. Fusion between TPM4 nucleotide 714 and ALK nucleotide 4084.
References


This article should be referenced as such: