Leukaemia Section
Mini Review

t(10;11)(p11.2;q23)
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Published in Atlas Database: January 2006
Online updated version: http://AtlasGeneticsOncology.org/Anomalies/t1011ID1178.html
DOI: 10.4267/2042/38326
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Identity

Note: must not be confused with the t(10;11)(p12;q23) involving AF10 in 10p12 and MLL, or the t(10;11)(p13;q14-21), also involving AF10, but with CALM on chromosome 11.

Clinics and pathology

Disease
Acute non lymphoblastic leukemia (ANLL).

Phenotype / cell stem origin
M4/M5.

Epidemiology
Only three cases reported to date: all infants (2M/1F).

Clinics
Two boys aged 2 and 8 months respectively, achieved complete remission (1 years+, 5 years+), the newborn girl died soon for infection during induction.

Cytogenetics

A. Partial Q-banded karyotype showing the t(10;11)(p11.2;q23), derivative chromosomes are on the right.
B. FISH using RP13-31H8 (ABI1) shows one signal on the normal chromosome 10 and the another one split between the p arm of der(10) (arrowheads) and the q arm of der(11) (arrow). The BAC clone was provided by Prof. M.Rocchi.
**Genes involved and Proteins**

**ABI-1**

Location: 10p11.2

DNA / RNA

Different splicings.

Protein

Possesses a SH3 domain; cell growth inhibitor.

**MLL**

Location: in 11q23

DNA / RNA

13-15 kb mRNA.

Protein

431 kDa; contains two DNA binding motifs (a AT hook, and Zinc fingers), a DNA methyl transferase motif, a bromodomain; transcriptional regulatory factor; nuclear localisation.

**Results of the chromosomal anomaly**

**Hybrid gene**

Description

5’ MLL - 3’ ABI1; fusion at MLL exon 6-7.

The breakpoint of ABI1 gene is the same in the two cases studied (nucleotide 433), while the breakpoint of MLL can be located either in exon 6 or 7.

**Fusion protein**

Description

1727 amino acids (1406 from MLL and 321 from ABI-1); NH2-AT-hook, DNA methyltransferase, and transcriptional repression domain of MLL, fused to the homeodomain homologous region and the SH3 domain of ABI-1 in COOH.

**References**


This article should be referenced as such: