

## t(2;11)(q11;q23)

### Clinics and Pathology

<b>Disease</b>	Acute lymphocytic leukemia (ALL) with proB phenotype
<b>Epidemiology</b>	Three cases reported to date, two infants and one two-year-old child
<b>Prognosis</b>	Both cases of infant ALL showed a poor survival, 2 and 9 months respectively. The third case, a two-year-old child, achieved complete remission.

### Cytogenetics

<b>Cytogenetics</b>	The three reported cases carried different rearrangements involving chromosomes 2 and 11: t(2;11)(p15;p14), t(2;11)(q11;q23) and ins(11;2)(q23;q11.2q11.2).
<b>Molecular</b>	
<b>Probes</b>	LAF4 specific PACs: RP6-44B23 and RP6-226I23

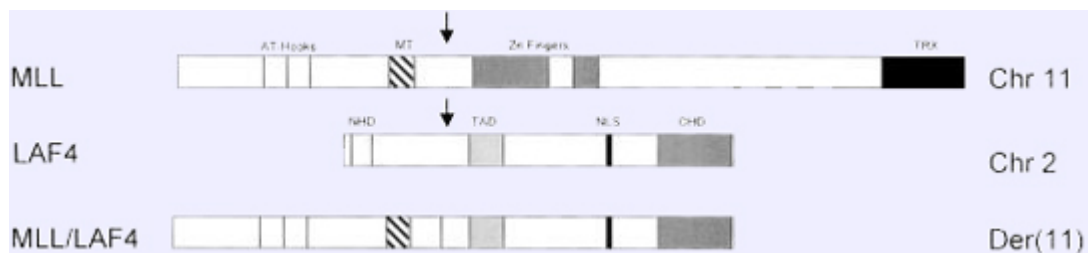
### Genes involved and Proteins

<b>Gene Name</b>	<a href="#">MLL</a>
<b>Location</b>	11q23
<b>Dna / Rna</b>	13-15 kb mRNA
<b>Protein</b>	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
<b>Gene Name</b>	<a href="#">LAF4</a>
<b>Location</b>	2q11-q12
<b>Note</b>	<a href="#">AF4</a> and <a href="#">AF5q31</a> , also known as MLL fusion partners, belong to the same gene family
<b>Dna / Rna</b>	22 exons, transcript length: 3855 bp
<b>Protein</b>	LAF4 protein (Lymphoid nuclear protein related to AF4) 1226 amino acids; 133734 Da

### Result of the chromosomal anomaly

<b>Hybrid gene</b>	5' MLL - 3' LAF4
<b>Transcript</b>	

## Fusion Protein



Schematic representation of MLL, LAF4, and the putative MLL-LAF4 fusion protein. MT, methyltransferase domain; TRX, Drosophila trithorax homology; NHD, N-terminal homology domain; TAD, transactivation domain; NLS, nuclear localization sequence; CHD, C-terminal homology domain.

**Description** The MLL-LAF4 fusion protein includes the transactivation domain of LAF4 that is part of the AF4/LAF4/FMR2 homology domain.

## External links

Other database [t\(2;11\)\(q11;q23\)](#) [Mitelman database \(CGAP - NCBI\)](#)

Other database [t\(2;11\)\(q11;q23\)](#) [CancerChromosomes \(NCBI\)](#)

## To be noted

Additional cases are needed to delineate the epidemiology of this rare entity:  
**you are welcome to submit a paper to our new [Case Report section](#).**

## Bibliography

**LAF4, an AF4-related gene, is fused to MLL in infant acute lymphoblastic leukemia.**

von Bergh ARM, Beverloo HB, Rombout P, van Wering ER, van Weel MH, Beverstock GC, Kluin PM, Slater RM, Schuurin E.

Genes Chromosomes Cancer 2002, 35, 92-96.

Medline [22191012](#)

**Occurrence of an MLL/LAF4 fusion gene caused by the insertion ins(11;2)(q23;q11.2q11.2) in an infant with acute lymphoblastic leukemia.**

Bruch J, Wilda M, Teigler-Schlegel A, Harbott J, Borkhardt A, Metzler M.

Genes Chromosomes Cancer 2003; 37: 106-109.

Medline [22546698](#)

**Fusion of an AF4-related gene, LAF4, to MLL in childhood acute lymphoblastic leukemia with t(2;11)(q11;q23).**

Hiwatari M, Taki T, Taketani T, Taniwaki M, Sugita K, Okuya M, Eguchi M, Ida K, Hayashi Y.

Oncogene 2003; 22: 2851-2855.

Medline [12743608](#)

**LAF-4 encodes a lymphoid nuclear protein with transactivation potential that is homologous to AF-4, the gene fused to MLL in t(4;11) leukemias**

Ma C, Staudt LM.

Blood 1996; 87: 734-745.

Medline [8555498](#)

**Contributor(s)**

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2005

**Citation**

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