

## t(1;11)(q21;q23)

### Clinics and Pathology

**Disease** [ANLL](#), ALL at times

**Phenotype / cell stem origin** 30 cases were reported. 25 of them were ANLL: mostly M4/M5 (16), 2 M1, 1 M2, 3 secondary (s) LAM, in 3 cases FAB type were not described. The other cases were : 2 ALL, 1 [biphenotypic ALL](#), 1 sALL and 1 [sMSD](#).

**Epidemiology** most cases were infants (10/23) and children (7/23) , range is 4 months - 62 years, balanced sex ratio (14F/12M on 26 cases).

**Prognosis** Yet unknown

### Cytogenetics

**Cytogenetics** presents as der(11)t(1;11)(q21;q23) in 9 of the 30 cases. Unbalanced Morphological form is identified in the 4 ALL and in all of the secondary cases.

**Additional anomalies** balanced translocation is present as sole anomaly in 16/21 cases, and as part of simple karyotype in 5/21 cases ; [+19](#), [+22](#) were recurrent. Additional abnormalities were observed in 8 of the 9 cases showing the der (11); karyotype of 5 cases were highly complex.

**Variants** two three-way translocations were identified : t(1;11;3)(q21;q23;q21) and t(1;11;4)(q21;q23;p16).

### Genes involved and Proteins

**Gene Name** [AF1q](#)

**Location** 1q21

**Dna / Rna** 1.8 kb mRNA

**Protein** 9 kDa

**Gene Name** [MLL](#)

**Location** 11q23

**Dna / Rna** 21 exons, spanning over 100 kb; 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 transcriptional regulatory factor; nuclear localisation

### Result of the

## chromosomal anomaly

**Hybrid gene**  
Description 5' MLL-3' AF1q; breakpoints: between exons 6 and 7 in MLL and within the 5' untranslated region in AF1q

**Fusion Protein**  
Description N-term -- AT hook (DNA binding) and DNA methyltransferase motif from MLL fused to the entire AF1q on the der(11); the reciprocal on der(1) is out of frame.

## External links

Other database [t\(1;11\)\(q21;q23\)](#) [Mitelman database \(CGAP - NCBI\)](#)

Other database [t\(1;11\)\(q21;q23\)](#) [CancerChromosomes \(NCBI\)](#)

## Bibliography

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Le Du K, Jeandidier E, Garnache F, Rohrlich P, Bresson JL, Collonge-Rame MA .  
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