

## t(8;22) (p11;q13)

### Identity

**Note** Two distinct clinical syndromes have been associated with the 8p11-p12 region :

Stem-cell myeloproliferative disorder with [FGFR1](#) rearrangement.  
AML M4 or M5 erythrophagocytosis-associated, with MOZ rearrangement.

the t(8;22) (p11; q13) involves MOZ

The partners of 8p11 are [8q13](#), 14q11, 16p13, 19q13, 22q13 and 3q27, 17q12 in a complexe translocation t(3;8;17)(q27;p11; q12).

### Clinics and Pathology

**Disease** Acute myelomonocytic or monocytic leukemia (M4, M5a, M5b) associated with erythrophagocytosis by blasts noted to various degree, one case is probably a therapy-related leukemia.

**Epidemiology** Rare

**Cytology** Erythrophagocytosis by blasts cells is occasionally found but not marked.

**Prognosis** probably poor

### Cytogenetics

**Cytogenetics** t(8;19) (p11;q13) is a variant of [t\(8;16\) \(p11;p13\)](#)

**Morphological**  
**Additional anomalies** In one case association with [trisomy 8](#)

### Genes involved and Proteins

**Gene Name** MOZ

**Location** 8p11

**Note** MOZ contains a LAP (Leukemia associated protein) zinc finger domain , a HAT domain (Histone acetyltransferase) and a acidic domain.  
Detection by FISH : YAC 176C9.

**Protein** ZNF220

Monocytic leukemia zinc finger protein

2004 amino acids and 225 kDa nuclear protein, with 2 PHD-type zinc fingers.

MOZ is a histone acetyltransferase (HAT) and the founding member of the MYST family of HATs, a family that includes proteins involved in cell cycle regulation, chromatin remodeling and dosage compensation.

MOZ plays an important role during hematopoiesis with his transcriptional coregulator activity.

**Gene Name** [P300](#)

**Note** Detection: FISH with the bacterial artificial chromosome clone H59D10

**Protein** Adenoviral E1A-associated protein p300 with acethyltransferase activity

### Result of the

## chromosomal anomaly

### Hybrid gene

Note

Gene fusion MOZ/P300

Description

MOZ is disrupted within the sequences encoding the acidic domain. Both fusion transcripts are expressed. The t(8;22) breakpoints occurs in MOZ codon 1117 within an exon of 4 kb.

### Fusion Protein

Description

MOZ-p300 fusion is similar to MOZ-[CBP](#) described in the t(8;16) but involve p300 instead of CBP. The translocation creates in-frame fusion proteins (MOZ-p300 and p300-MOZ). The two fusion proteins retain the N-terminus portion of MOZ including the HAT domain.

Oncogenesis

How the MOZ-p300 fusion protein is involved in acute leukemia is not known, but it probably affects the chromatin condensation.

## External links

Other

database

[t\(8;22\) \(p11;q13\)](#)

[Mitelman database \(CGAP - NCBI\)](#)

Other

database

[t\(8;22\) \(p11;q13\)](#)

[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.**

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<http://www.infobiogen.fr/services/chromcancer/Anomalies/t0822p11q13ID1119.html>

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