**t(1;21)(p32;q22)**

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**Disease**

Acute myelomonoblastic leukemia (M4 by FAB subtype).

**Phenotype/cell stem origin**

CD34+, DR+, CD117+, CD15+, CD13+, CD33+, MPO+, CD64+ blast population consistent with ANLL-M4 by FAB subtype.

**Etiology**

Unknown, reported agricultural chemical exposure in single case.

**Epidemiology**

Single case involving 25 year old male.

**Clinics**

Patient presented w/o palpable adenopathy, gingival hyperplasia, systolic murmur, hepatosplenomegaly and petechia. WBC was normal with anemia and thrombocytopenia.

**Cytology**

Predominately large blasts with moderate cytoplasm, smooth nuclear chromatin, and pro-minent nucleoli, folded nuclear contours present in blast subset.

**Treatment**

Patient lost to treatment.

**Evolution**

Unknown.

**Prognosis**

Unknown.

**Cytogenetics**

**Cytogenetics morphological**

Single case presented with second copy of der(1)t(1;21).

**Cytogenetics molecular**

AML1 fusion suggested by partial translocation of 500 kb probe signal to der(1)t(1;21).

**Probes**

Commercially available 500 kb AML1 probe.

**Genes involved and proteins**

**Note**

The putative 1p32 gene partner is unknown. Cryptic t(12;21) TEL(ETV6)/AML1 rearrangement is unlikely due to normal TEL metaphase FISH signal using commercial TEL/AML1 probe.

**AML1**

**Location**

21q22

**DNA/RNA**

AML1 is oriented 3’ toward the centromere.

**Protein**

Contains a runt domain and at C-term a tranactivation domain; forms heterodimers, widely expressed; nuclear localization; transcription factor (activator) for various hematopoietic-specific genes.
Chromosome and FISH images showing:
1) partial karyotype and ideogram of t(1;21)(p32;q22) including a second copy of the der(1)t(1;21) present in the clone; and
2) metaphase FISH showing red AML1 signal on the two copies of the der(t)(1;21), the der(21)t(1;21) and the normal 21 homolog. Green TEL signal is present of both 12 homologs indicating that no cryptic TEL/AML1 gene rearrangement is present. The adjacent interphase nucleus shows four AML1 signals and two TEL signals consistent with the metaphase pattern.

**To be noted**

**Case Report**
t(1;21)(p32;q22) as a non-random abnormality in AML M4

**References**


This article should be referenced as such: