Leukaemia Section
Short Communication

**t(8;21)(q23;q22)**

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**Clinics and pathology**

**Disease**
Refractory anaemia with excess of blasts (RAEB)

**Epidemiology**
Only one case to date, a 78 year old male patient (Chan et al., 2005).

**Genes involved and proteins**

**ZFPM2/FOG2**

**Location**
8q23

**Protein**
ZFP2M, better known as FOG2, forms a transcription complex with GATA4; essential in tissue development and differentiation (heart, testis, mammary gland...).

**RUNX1**

**Location**
21q22

**Protein**
Transcription factor; role in normal hematopoiesis.

**Result of the chromosomal anomaly**

**Hybrid gene**

**Transcript**
Breakpoints in RUNX1 exon 6 and ZFPM2 exon 6. Both reciprocal transcripts are expressed.

**Fusion protein**

**Description**
1242 amino acids (aa) protein, composed of aa 1 to 268 from RUNX1 and aa 178 to 1151 from ZFPM2.

**Oncogenesis**
NH2 RUNX1 - ZFPM2 COOH fuses the DNA binding domain of RUNX1 to most of ZFPM2 (including the 8 zinc finger domains and the corepressor C-term binding domain), and represses the transcriptional activity of the core binding factor (CBF, the dimer made of RUNX1 (CBFA2) and CBFB) and GATA1. The reciprocal ZFPM2-RUNX1 may also reduce the transcriptional activity of the normal RUNX1 allele.

**References**


This article should be referenced as such: