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Leukaemia Section
Short Communication

t(11;22)(q23;q13)

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Identity

Note: Not to be confused with the t(11;22)(q23;q11), involving MLL and hCDCrel.

Clinics and pathology

Disease

A case of therapy related leukemia, 2.5 years after the treatment of a non Hodgkin lymphoma.

Phenotype/cell stem origin

Acute non lymphocytic leukemia.

Prognosis

Unknown (relapse at 20 months) but likely to be similar to the prognosis associated with other 11q23 therapy related leukemia.

Genes involved and proteins

MLL

Location : In 11q23.

DNA/RNA
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.

P300

Location : 22q13

DNA/RNA
9 kb mRNA.

Protein
264 kDa; widely expressed; possesses a nuclear localization signal, a poly-serine, a bromodomain, a poly-glu, a binding region for E1A adenovirus, and a poly-gln;. interact with transcriptional activators as well as repressors; involved (with CBP) in growth, differentiation, and apoptosis.

Result of the chromosomal anomaly

Hybrid gene

Transcript
Chimeric mRNAs from both derivative chromosomes are found.

Fusion protein

Description
The MLL/p300 fusion transcript encodes a protein of about 3000 amino acids, the N-term half comprising the AT hook and DNA methyltransferase (exons 1 to 9) from MLL and the C-term half comprising the acetyltransferase domain and the TFIIB-binding domain of p300, excluding the nuclear localisation signal and the bromodomain.

References

Ida K, Kitabayashi I, Taki T, Taniwaki M, Noro K, Yamamoto M, Ohki M, Hayashi Y. Adenoviral E1A-associated protein p300 is involved in acute myeloid leukemia with t(11;22)(q23;q13). Blood. 1997 Dec 15;90(12):4699-704

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