Leukaemia Section
Short Communication

t(3;6)(q27;p21) PIM1/BCL6
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Identity

Note: t(3;6)(q27;p21) has been described in a few cases were PIM1/BCL6 rearrangement has not been ascertained, or were another hybrid gene has been uncovered.

Clinics and pathology

Disease
Non Hodgkin lymphoma (NHL).

Epidemiology
Only one case available: a case of diffuse large B-cell lymphoma (DLBCL) (Yoshida et al., 1999).

Genes involved and proteins

BCL6

Location
3q27

Protein
706 amino acids; composed of a NH2-term BTB/POZ domain (amino acids 1-130 (32-99 according to Swiss-Prot)) which mediates homodimerization and protein-protein interactions with other corepressors (including HDAC1 and NCOR2/SMRT) to constitute a large repressing complex, another transcription repression domain (191-386), PEST sequences (300-417) with a KKYK motif (375-379), and six zinc finger at the C-term (518-541, 546-568, 574-596, 602-624, 630-652, 658-681), responsible for sequence specific DNA binding.

Transcription repressor; recognizes the consensus sequence: TTCCCT(A/C)GAA (Albagli-Curiel, 2003).

PIM1

Location
6p21.2

Protein
404 amino acids; serine/threonine-protein kinase; regulated by hematopoietic cytokine receptors; synergy with c-MYC in cell proliferation and in apoptosis induction through an enhancement of the activation of caspase-3-like proteases; Cdc25A (cell cycle phosphatase) is a substrate for Pim-1.

Result of the chromosomal anomaly

Hybrid gene

Description
5’ PIM1 - 3’ BCL6, but also 5’ BCL6 - 3’ PIM1; breakpoint in BCL6 between exon 1 and 2.

References


This article should be referenced as such: