Leukaemia Section
Short Communication

t(3;3)(q27;q29)

Jean-Loup Huret

Genetics, Dept Medical Information, University of Poitiers, CHU Poitiers Hospital, F-86021 Poitiers, France (JLH)

Published in Atlas Database: May 2009
Online updated version: http://AtlasGeneticsOncology.org/Anomalies/t0303q27q29ID2087.html
DOI: 10.4267/2042/44744

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 2.0 France Licence.
© 2010 Atlas of Genetics and Cytogenetics in Oncology and Haematology

Clinics and pathology

Disease
Non Hodgkin lymphoma (NHL)

Epidemiology
Four cases to date: a follicular mixed cell lymphoma in a 78-year-old female patient, a grade 3B follicular lymphoma in a female patient, a gastric lymphoma, and a diffuse large B-cell lymphoma (DLCL) (Yunis et al., 1984; Bosga-Bouwer et al., 2003; Chen et al., 2006; Yoshida et al., 1999).

Prognosis
No data.

Cytogenetics

Additional anomalies
There was a complex karyotype, including a t(14;18)(q32;q21), +15, and other anomalies in one case (Yunis et al., 1984), and also a complex karyotype in an other case (Bosga-Bouwer et al., 2003); data is missing in the two other cases.

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: TTCCT(A/C)GAA (Albagli-Curiel, 2003).

TFRC
Location
3q29
Protein
760 amino acids; composed of an NH2-term cytoplasmic domain (amino acids 1-67), a transmembrane domain (aa 68-88), and a C-term extracellular domain (aa 89-706) according to Swiss-Prot. Cell surface membrane glycoprotein; involved in iron homeostasis by regulating cellular iron uptake (Dorak, 2008).

Result of the chromosomal anomaly

Hybrid gene
Description
5’ TFRC - 3’ BCL6, with a breakpoint in BCL6 between exon 1 and 2 (Yoshida et al., 1999); the breakpoint on TFRC was found 288 bp 3’ downstream of the breakpoint in the other case studied with molecular techniques (Chen et al., 2006).

References


Bosga-Bouwer AG, van Imhoff GW, Boonstra R, van der Veen A, Haralambieva E, van den Berg A, de Jong B, Krause V, Palmer MC, Coupland R, Kluin PM, van den Berg E, Popperma S. Follicular lymphoma grade 3B includes 3 cytogenetically defined subgroups with primary t(14;18), 3q27, or other translocations: t(14;18) and 3q27 are mutually exclusive. Blood. 2003 Feb 1;101(3):1149-54


This article should be referenced as such: