

Leukaemia Section

Short Communication

t(1;14)(q21;q32) FCGR2B/IGH

Jacques Boyer

Laboratoire d'hématologie, CH du MANS, France (JB)

Published in Atlas Database: February 2005

Online updated version: <http://AtlasGeneticsOncology.org/Anomalies/t0114q21q32ID1341.html>

DOI: 10.4267/2042/38191

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 2.0 France Licence.

© 2005 Atlas of Genetics and Cytogenetics in Oncology and Haematology

Clinics and pathology

Disease

Follicular lymphoma in one CD10+ case, but without a t(14;18)(q32;q21), bcl2 negative, and with a t(1;14)(q21;q32); follicular lymphoma with FCGR2B rearrangement and dup(1)(q21q25) in another case.

Epidemiology

These two cases with FCGR2B rearrangement were found among a panel of 76 non Hodgkin's lymphomas.

Prognosis

May be associated with tumor progression.

Cytogenetics

Cytogenetics morphological

One case with 46, XX, t(1;14)(q21;q32), t(8;9)(q24;q13); progression to a diffuse large cells lymphoma with a complexe karyotype. An another case with FCGR2B rearrangement in a follicular lymphoma: the karyotype was complexe with dup(1)(q21q25), t(14;18)(q32;q21).

Genes involved and proteins

FCGR2B

Location

1q22

IgH

Location

14q32

Result of the chromosomal anomaly

Hybrid gene

Description

The translocation juxtapose the 5' switch region of IGHG2 to a region upstream of FCGR2B in the der(1) chromosome. FCGR2B is deregulated by this translocation and FCGR2B b2 mRNA isoform is overexpressed.

Fusion protein

Note

No fusion protein.

Oncogenesis

It is possible that alteration in the b2/b1 mRNA isoforms ratio in B-cells may promote B cell survival. This anomaly is bcl2 deregulation-independant because FCGR2B has been shown to be a tumor-enhancing factor in non lymphoid cells in murine in vivo and in vitro models. Deregulation of FCGR2B expression can be considered as a second event which may impart additional growth advantage to the bcl2 deregulated B-cells.

References

Callanan MB, Le Baccon P, Mossuz P, Duley S, Bastard C, Hamoudi R, Dyer MJ, Klobeck G, Rimokh R, Sotto JJ, Leroux D. The IgG Fc receptor, FcγRIIB, is a target for deregulation by chromosomal translocation in malignant lymphoma. Proc Natl Acad Sci U S A. 2000 Jan 4;97(1):309-14

Macintyre E, Willerford D, Morris SW. Non-Hodgkin's Lymphoma: Molecular Features of B Cell Lymphoma. Hematology Am Soc Hematol Educ Program. 2000;:180-204

Chen W, Palanisamy N, Schmidt H, Teruya-Feldstein J, Jhanwar SC, Zelenetz AD, Houldsworth J, Chaganti RS. Deregulation of FCGR2B expression by 1q21 rearrangements in follicular lymphomas. Oncogene. 2001 Nov 15;20(52):7686-93

This article should be referenced as such:

Boyer J. t(1;14)(q21;q32) FCGR2B/IGH. Atlas Genet Cytogenet Oncol Haematol. 2005; 9(2):155.