Atlas of Genetics and Cytogenetics in Oncology and Haematology

OPEN ACCESS JOURNAL

INIST-CNRS

Leukaemia Section

Short Communication

t(14;19)(q11;q13) TRA/NECTIN2

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Published in Atlas Database: September 2019

Online updated version : http://AtlasGeneticsOncology.org/Anomalies/t1419q11q13TRANECTIN2ID1513.html
Printable original version : http://documents.irevues.inist.fr/bitstream/handle/2042/70751/09-2019-t1419q11q13TRANECTIN2ID1513.pdf
DOI: 10.4267/2042/70751

Abstract

Review on t(14;19)(q11;q13), with data on clinics, and the genes involved.

Keywords
Chromosome 14; chromosome 19; TRA; NECTIN2; peripheral T-cell lymphoma; angioimmunoblastic T-cell lymphoma.

Clinics and pathology

Disease

T-cell lymphomas

Epidemiology

Four cases available to date: three peripheral T-cell lymphoma not otherwise specified (PTCL-NOS) (two male patients aged 20 and 63 yrs and one female patient aged 63 yrs), and one angioimmunoblastic T-cell lymphoma (Lepretre et al., 2000; Almire et al., 2007; Shin et al., 212).

Cytogenetics

Cytogenetics morphological

The karyotype was complex in all four cases.

Genes involved and proteins

TRA (T cell Receptor Alpha)

Location 14q11.2

NECTIN2 (nectin cell adhesion molecule 2)

Location 19q13.32

Note
NECTIN2 is also called PVRL2 (poliovirus receptor-related 2).

Protein
NECTIN2 is a cell membrane protein involved in immune checkpoint, part of the TIGIT-PVR/PVRL2 axis. NECTIN2 is composed of a signal peptide (amino acids (aa) 1-31), an extracellular domain (aa 32-360), a transmembrane domain (aa 361-381), and a cytoplasmic domain (aa 382-538). NECTIN2 also interacts with PVRIG CD226, CD96 to stimulate or inhibit lymphocyte cell signaling (Stamm et al., 2018; Whelan et al., 2019).

Result of the chromosomal anomaly

Hybrid gene

On chromosome 19, there was a cluster of breakpoints in the NECTIN2 gene region, 130 kb downstream of BCL3. The breakpoints on chromosome 14 were located in theTRAJ region (Almire et al., 2007).

Fusion protein

Oncogenesis
NECTIN2 was highly expressed in the t(14;19)(q11;q13)-positive tumors.

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This article should be referenced as such:

Huret JL. t(14;19)(q11;q13) TRA/NECTIN2. Atlas Genet Cytogenet Oncol Haematol. 2020; 24(6):253-254.