

# Leukaemia Section

## Short Communication

### t(11;14)(p13;q32) IGH/CD44

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#### Abstract

Review on t(11;14)(p13;q32), with data on clinics, and the genes involved.

#### Keywords

Chromosome 11; chromosome 14; IGH; CD44; gastric lymphomas, nongastric extranodal lymphomas, nodal follicular lymphomas, nodal diffuse large B-cell lymphoma

#### Clinics and pathology

##### Disease

Mature B-cell non-Hodgkin Lymphomas (NHL). Nine cases available so far, from a unique study (Hu et al., 2010).

##### Phenotype/cell stem origin

In a study of 114 cases of mature B-cell NHLs, the t(11;14)(p13;q32) IGH/CD44 was found in:

- 4 cases (8%) of gastric lymphoma; mucosa-associated lymphoid lymphoma (MALT): 1 (25%); composite DLBCL with residual MALT lymphoma: 2 (33%); diffuse large B-cell lymphoma (DLBCL) germinal center B-cell-like (GCB)-type: 1 (4%);
- 2 cases (25%) of non-gastric extranodal lymphoma: DLBCL GCB-type: 2 (67%);
- 2 cases (7%) of follicular lymphoma (FL), one of which also harboring a t(14;18)(q32;q21) IGH/BCL2;
- 1 cases (4%) of nodal DLBCL GCB-type.

#### Genes involved and proteins

#### CD44

**Location** 11p13

#### DNA/RNA

20 exons spanning 60 kb. The first five and the last five exons are constant; while the ten exons located between, are subject to alternative splicing, resulting in the generation of CD44 variants.

#### Protein

CD44 is composed of extracellular, transmembrane, and cytoplasmic domains. CD44 is a membrane receptor which plays a role in cell adhesion (cell-cell and cell-extracellular matrix interactions), cell traffic, presentation of chemokines and growth factors, signals transmission. High levels of expression of CD44 have been observed in a high number of cancer types, including non-Hodgkin Lymphomas (Sen and Yip 2010).

#### IGH

**Location** 14q32.33

#### Result of the chromosomal anomaly

##### Hybrid gene

##### Description

5' IGH-3' CD44.

The translocation juxtaposes the IGHS $\mu$  enhancer to the 5' regulatory region of CD44 in a tail-to-head orientation. Various breakpoints: breakpoints were spread within small regions of IGHS $\mu$  and small regions between CD44 exon 1 and 2.

## **Fusion protein**

### **Description**

CD44 starting from the ATG at nucleotide 254 with a strong Kozak sequence.

### **Oncogenesis**

The ectopic expression of CD44 resulted in increase in cell growth and clonogenicity. To be noted is that the t(11;14)(p13;q32) was detected in 4 patients with advanced stages of disease.

## **References**

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