

# Leukaemia Section

## Short Communication

### t(11;18)(q21;q21)

Baens Mathijs, Peter Marynen

Center for Human Genetics, Molecular Genetics, Flanders Interuniversity Institute for Biotechnology, Catholic University of Leuven, Leuven, Belgium (BM, PM)

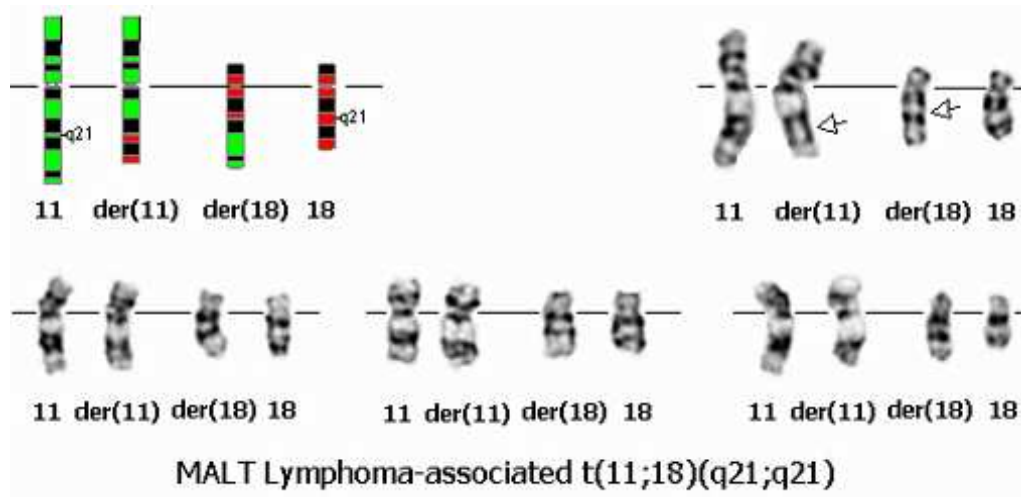
Published in Atlas Database: September 2001

Online updated version : <http://AtlasGeneticsOncology.org/Anomalies/t1118ID2022.html>

DOI: 10.4267/2042/37815

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 2.0 France Licence.  
© 2002 Atlas of Genetics and Cytogenetics in Oncology and Haematology

## Identity



t(11;18)(q21;q21) G-banding - Courtesy Charles Bangs.

## Clinics and pathology

### Disease

B-cell non Hodgkin lymphoma (NHL), marginal zone B-cell lymphoma of Mucosa-Associated Lymphoid Tissue (MALT) -type.

### Phenotype/cell stem origin

Marginal zone B-cells.

### Epidemiology

Found in extranodal MZBCL or MALT-type (50 %), absent in splenic and nodal MZBCL.

### Prognosis

For gastric MALT-type lymphomas, t(11;18) is a clonal

marker for resistance to *Helicobacter pylori* eradication therapy and antigen independent growth.

## Genes involved and proteins

### **BIRC3**

**Location:** 11q21

### **Protein**

68 kDa; 604 amino acids. Member of the 'inhibitor of apoptosis' (IAP) protein family.

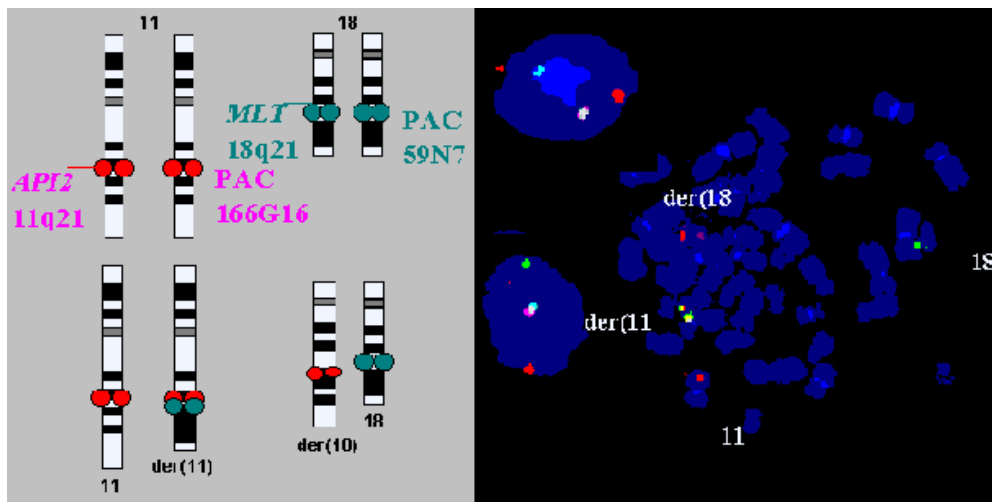
### **MALT1**

**Location:** 18q21

### **Protein**

92 kDa; 824 amino acids.

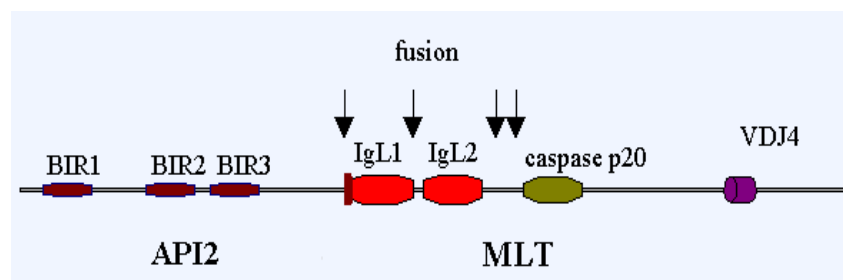
## Cytogenetics



t(11;18) FISH - Baens Mathijs, Peter Marynen.

## Result of the chromosomal anomaly

### Fusion protein



BIRC3/MALT1 fusion protein - Baens Mathijs, Peter Marynen.

### Hybrid gene

#### Description

5' API2 on chromosome 11q21 translocated on chromosome 18 in frame with 3' MALT1. Deletions often exclude the expression of the reciprocal 5' MLT - API2 3' transcript.

#### Description

N-term API2-MLT C-term fusion protein; All MALT-type lymphomas reported with a t(11;18) express an (in frame) API2-MLT fusion protein with consistently the three BIR domains of API2 fused to the caspase p20 domain and VDJ4-like domain of MLT.

## References

Akagi T, Motegi M, Tamura A, Suzuki R, Hosokawa Y, Suzuki H, Ota H, Nakamura S, Morishima Y, Taniwaki M, Seto M. A novel gene, MALT1 at 18q21, is involved in t(11;18) (q21;q21) found in low-grade B-cell lymphoma of mucosa-associated lymphoid tissue. *Oncogene*. 1999 Oct 14;18(42):5785-94

Dierlamm J, Baens M, Wlodarska I, Stefanova-Ouzounova M, Hernandez JM, Hossfeld DK, De Wolf-Peeters C, Hagemeijer A, Van den Berghe H, Marynen P. The apoptosis inhibitor gene

API2 and a novel 18q gene, MLT, are recurrently rearranged in the t(11;18)(q21;q21) associated with mucosa-associated lymphoid tissue lymphomas. *Blood*. 1999 Jun 1;93(11):3601-9

Baens M, Maes B, Steyls A, Geboes K, Marynen P, De Wolf-Peeters C. The product of the t(11;18), an API2-MLT fusion, marks nearly half of gastric MALT type lymphomas without large cell proliferation. *Am J Pathol*. 2000 Apr;156(4):1433-9

Baens M, Steyls A, Dierlamm J, De Wolf-Peeters C, Marynen P. Structure of the MLT gene and molecular characterization of the genomic breakpoint junctions in the t(11;18)(q21;q21) of marginal zone B-cell lymphomas of MALT type. *Genes Chromosomes Cancer*. 2000 Dec;29(4):281-91

Dierlamm J, Baens M, Stefanova-Ouzounova M, Hinz K, Wlodarska I, Maes B, Steyls A, Driessen A, Verhoef G, Gaulard P, Hagemeijer A, Hossfeld DK, De Wolf-Peeters C, Marynen P. Detection of t(11;18)(q21;q21) by interphase fluorescence in situ hybridization using API2 and MLT specific probes. *Blood*. 2000 Sep 15;96(6):2215-8

*This article should be referenced as such:*

Mathijs B, Marynen P. t(11;18)(q21;q21). *Atlas Genet Cytogenet Oncol Haematol*. 2002; 6(1):32-33.