

## t(2;22)(p23;q11.2)

### Clinics and Pathology

**Disease** Anaplastic large cell lymphoma (ALCL): translocations involving 2p23 are found in more than half cases of [anaplastic large cell lymphoma](#) (ALCL), a high grade non Hodgkin lymphoma (NHL). They involve ALK, and are therefore called ALK+ ALCL.

The most frequent ALK+ ALCL being the the [t\(2;5\)\(p23;q35\)](#) with [NPM1](#) -ALK fusion protein, which localises both in the cytoplasm and in the nucleus.

The t(2;22)(p23;q11) has so far been described in only 1 case, and, like other t(2;Var) involving various partners and ALK, the fusion protein has a cytoplasmic localization; they are therefore called "cytoplasm only" ALK+ ALCL.

**Clinics** ALK+ ALCL without the t(2;5) (so called cytoplasmic only ALK cases) show clinical features similar to those of classical ALK+ ALCL: young age, male predominance, presentation with advanced disease, systemic symptoms, frequent involvement of extranodal sites, and a good prognosis. The t(2;22) case was that of a 12 yrs old girl.

### Genes involved and Proteins

**Gene Name** [ALK](#)

**Location** 2p23

**Protein** 1620 amino acids; 177 kDa; glycoprotein (200 kDa mature protein) ; membrane associated tyrosine kinase receptor

**Gene Name** [MYH9](#)

**Location** 22q11.2

**Protein** codes for the non-muscle myosin II, heavy chain type A. Non-muscle myosin II is involved in motility and cell division

**Germinal mutations** in patients with May-Hegglin anomaly and Fechner syndrome

**Somatic mutations** MYH9/ALK fusion protein in ALCL (see above)

### Result of the chromosomal anomaly

**Hybrid**

**gene** 5' MYH9 - 3' ALK

**Description**

**Fusion Protein Description** 2201 amino acids, 220 kDa. N term MYH9 fused to the 556 C-term amino acids from ALK (i.e. the entire cytoplasmic portion of ALK with the tyrosine kinase domain), instead of the classic 562 C-term amino acids from ALK seen in other ALK fusion proteins

## External links

Other database [t\(2;22\)\(p23;q11.2\)](#) [Mitelman database \(CGAP - NCBI\)](#)  
Other database [t\(2;22\)\(p23;q11.2\)](#) [CancerChromosomes \(NCBI\)](#)

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