t(7;8)(p12;q24) /MYC

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Abstract
Review on t(7;8)(p12;q24) /MYC, with data on clinics, and the genes implicated.

Clinics and pathology

Disease
Diffuse large B-cell lymphoma (DLBCL)

Epidemiology
One case to date, a female patient aged 80 years (Bertrand et al., 2007).

Prognosis
The patient died 6 months after diagnosis.

Cytogenetics

Cytogenetics morphological
A complex karyotype was found, with an i(6)(p10), a +20, and other abnormalities.

Genes involved and proteins

Note
Breakpoints occurred close to MYC in 8q24 and 100 kb from COBL and 1Mb from IKZF1 in 7p12.
- COBL is an actin nucleator which uses its WH2 domains for binding actin, to promote actin filament formation. Role in neuromorphogenesis (dendrite formation and dendritic arborisation) (Schwintzer et al., 2011).
- IKZF1 is a zinc finger transcription factor involved in both activation and repression of target genes. IKZF1 is expressed during early embryonic hematopoiesis, including hematopoietic stem cells, lymphoid precursors, erythroid precursors, and myeloid precursors. It is also expressed in developing striatal neurons. In the adult, IKZF1 expression is mainly restricted to lymphopoietic tissues and peripheral blood leukocytes (review in John and Ward, 2011).

MYC

Location
8q24.2

Protein
DNA binding protein.
Binds DNA as a heterodimer with MAX.
Involved in various cellular processes including cell growth, proliferation, cell adhesion, apoptosis, angiogenesis, and stem cell behaviour modulation.

References


This article should be referenced as such: