Atlas of Genetics and Cytogenetics in Oncology and Haematology

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Solid Tumour Section

Short Communication

t(2;17)(p23;q23)

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Clinics and pathology

Disease

Inflammatory myofibroblastic tumors.

Clinics

Rare soft tissue tumour found in children and young adults.

Pathology

Spindle cell proliferation with myofibroblastic differenciation and an inflammatory infiltrate.

Prognosis

Low malignant potential and good prognosis.

Genes involved and proteins

ALK

Location
2p23

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

CLTC (clathrin heavy polypeptide)

Location
17q23

Protein
1675 amino acids, 191 kDa; mediate endocytosis of transmembrane receptors.

Result of the chromosomal anomaly

Hybrid Gene

Description
5' CLTC - 3' ALK

Fusion Protein

Description
2196 amino acids. 1634 N-term amino acid from CLTC, containing nearly all of CLTC, including the triskelion assembly domain, fused to the 562 C-term amino acids from ALK (i.e. the entire cytoplasmic portion of ALK with the tyrosine kinase domain).

References

Griffin CA, Hawkins AL, Dvorak C, Henkle C, Ellingham T, Perlman EJ. Recurrent involvement of 2p23 in inflammatory myofibroblastic tumors. Cancer Res. 1999 Jun 15;59(12):2776-80

Ladanyi M. Aberrant ALK tyrosine kinase signaling. Different cellular lineages, common oncogenic mechanisms. Am J Pathol. 2000 Aug;157(2):341-5

Bridge JA, Kanamori M, Ma Z, Pickering D, Hill DA, Lydiatt W, Lui MY, Colleoni GW, Antonescu CR, Ladanyi M, Morris SW. Fusion of the ALK gene to the clathrin heavy chain gene, CLTC, in inflammatory myofibroblastic tumor. Am J Pathol. 2001 Aug;159(2):411-5

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