TAL1 (T-cell acute leukemia 1)

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Identity

Other names: SCL (stem cell leukaemia), TCL5 (T cell leukaemia 5).
Location: 1p32

DNA/RNA

TAL1

<table>
<thead>
<tr>
<th>1a</th>
<th>1b</th>
<th>2a</th>
<th>2b</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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DNA diagram

Description

8 exons; 16 kb.

Transcription

(Complex) alternate splicing of: 1A with 2A, or 3, or 5, vs 1B, 2B, 3 and 5.

Protein

Description

331 amino acids and other; 42, 40, 34 kDa; domains: prolin rich in N-term; basic Helix-Loop-Helix from the exon 6.

Expression

In erythroblastes, megakaryoblastes, mastocytes, basophils, and in the nervous system; role in hematopoietic cell differentiation.

Function

Transcription factor; exhibits sequence-specific DNA binding activity when in dimers with another bHLH protein such as E2A.

Homology

- TAL2 in 9q32;
- LYL1 in 19p13.

Implicated in

t(1;14)(p32;q11)/T-ALL → TAL1/TCRD

Deletions at the DNA level (in the 5' region) with a normal karyotype.

References

- Ono Y, Fukuwara N, Yoshih O. Transcriptional activity of TAL1 in T cell acute lymphoblastic leukemia (T-ALL) requires RBTN1 or -2 and induces TALLA1, a highly specific tumor marker of T-ALL. J Biol Chem 1997 Feb 14; 272(7):4576-81.

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