

TLX3 (T-cell leukemia, homeobox protein 3)

Identity

Other names

RNX

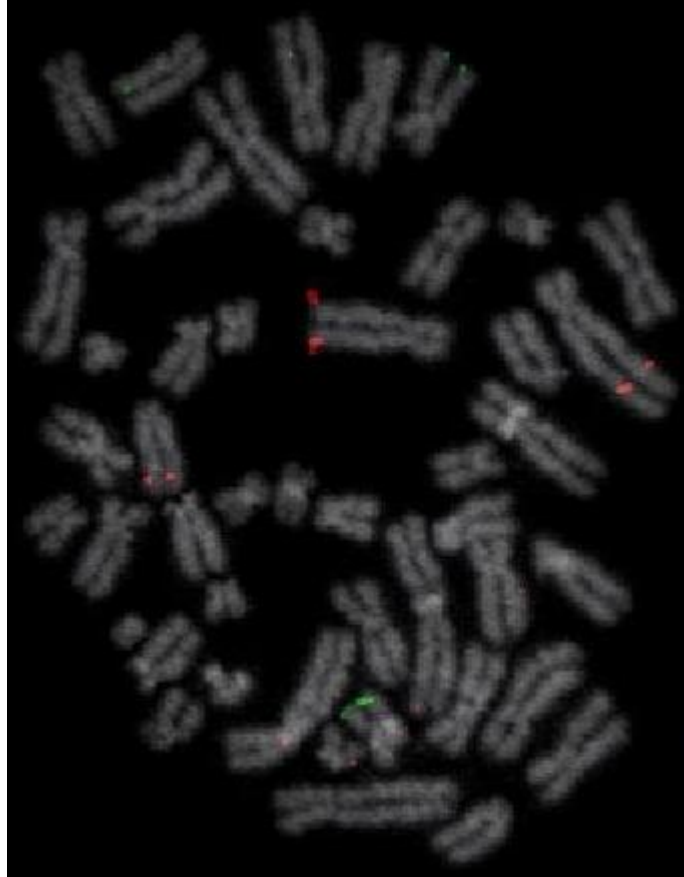
HOX11L2

Hugo

TLX3

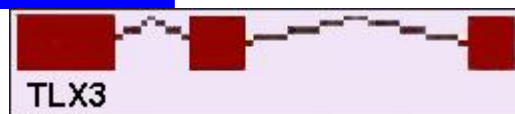
Location

5q35.1



TLX3 (5q35.1): FISH with BAC clone ctb-45L16 (red) showing a breakpoint signal in the consensus breakpoint region split between der(5) and der(14) partners. Analysis was performed on the pediatric T-ALL cell line HPB-ALL (DSMZ ACC-483) which carries t(5;14)(q35.1;q32.2) as part of a complex 4-way rearrangement involving chromosomes 1 and 16. Normally (in the absence of secondary translocations) the breakpoints on both partners lie closely equidistant to the q-arm telomeres rendering the translocation cryptic and difficult to detect even with chromosome painting.

DNA/RNA



Description 3 exons on 2.23 kb

Transcription In a centromeric --> telomeric orientation; 876 bp mRNA (coding)

Protein



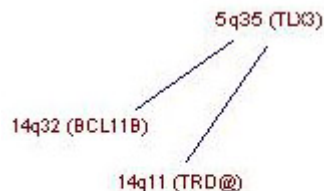
Description 291 amino acids, 31.8 kDa; contains one homeobox domain (residues 166-221)
Expression Narrowly restricted to brain.
Localisation Probably nuclear
Function Murine Tlx-3 and Tlx-1 together sustain expression of Drg-11, and control development of somatic and visceral relay sensory neurons.
Homology With homeobox genes, especially with those of the NK-like family.

Implicated in

Entity [t\(5;14\)\(q35;q32\)](#) in T-ALL-->TLX3 - [BCL11B](#)
Disease T-cell acute lymphocytic leukemia (T-ALL)
Prognosis TLX3 expression may denote poor prognosis.
Cytogenetics Cryptic translocation detectable by locus specific FISH. t(5;14) may exclude del(1)(p32) SIL-[TAL1](#) fusion.
Hybrid/Mutated Gene 5' TLX3-3' BCL11B on der(14).
Oncogenesis Ectopic expression in T-cells

Entity [t\(5;14\)\(q35;q11\)](#) in T-ALL --> TLX3 - [TCRD](#)
Disease T-cell acute lymphocytic leukemia (T-ALL)
Cytogenetics Apparent variant of t(5;14)
Hybrid/Mutated Gene 5' TLX3-TCRD on der(14)

Breakpoints



TLX3 and partners. Editor 08/2005.



Note Within the upstream region or within the neighboring gene RanBP17.

External links

Nomenclature
[Hugo](#) [TLX3](#)
[GDB](#) [TLX3](#)
[Entrez_Gene](#) [TLX3_30012](#) T-cell leukemia, homeobox 3

Cards
[Atlas](#) [TLX3ID398](#)
[GeneCards](#) [TLX3](#)
[Ensembl](#) [TLX3](#)

CancerGene	HOX11L2
Genatlas	TLX3
GeneLynx	TLX3
eGenome	TLX3
euGene	30012
Genomic and cartography	
GoldenPath	TLX3 - 5q35.1 chr5:170668893-170671742 + 5q35.1 (hg17-May_2004)
Ensembl	TLX3 - 5q35.1 [CytoView]
NCBI	Genes Cyto Gene Seq [Map View - NCBI]
OMIM	Disease map [OMIM]
HomoloGene	TLX3
Gene and transcription	
Genbank	AJ223798 [SRS] AJ223798 [ENTREZ]
Genbank	BC017291 [SRS] BC017291 [ENTREZ]
RefSeq	NM_021025 [SRS] NM_021025 [ENTREZ]
RefSeq	NT_086682 [SRS] NT_086682 [ENTREZ]
AceView	TLX3 AceView - NCBI
TRASER	TLX3 Traser - Stanford
Unigene	Hs.249125 [SRS] Hs.249125 [NCBI] HS249125 [spliceNest]
Protein : pattern, domain, 3D structure	
SwissProt	O43711 [SRS] O43711 [EXPASY] O43711 [INTERPRO]
Prosite	PS00027 HOMEBOX_1 [SRS] PS00027 HOMEBOX_1 [Expasy]
Prosite	PS50071 HOMEBOX_2 [SRS] PS50071 HOMEBOX_2 [Expasy]
Interpro	IPR001356 Homeobox [SRS] IPR001356 Homeobox [EBI]
Interpro	IPR009057 Homeodomain like [SRS] IPR009057 Homeodomain like [EBI]
CluSTr	O43711
Pfam	PF00046 Homeobox [SRS] PF00046 Homeobox [Sanger] pfam00046 [NCBI-CDD]
Smart	SM00389 HOX [EMBL]
Prodom	PD000010 Homeobox [INRA-Toulouse]
Prodom	O43711 TLX3 HUMAN [Domain structure] O43711 TLX3 HUMAN [sequences sharing at least 1 domain]
Blocks	O43711
Polymorphism : SNP, mutations, diseases	
OMIM	604640 [map]
GENECLINICS	604640
SNP	TLX3 [dbSNP-NCBI]
SNP	NM_021025 [SNP-NCI]
SNP	TLX3 [GeneSNPs - Utah] TLX3 [SNP - CSHL] TLX3 [HGBASE - SRS]
General knowledge	
Family Browser	TLX3 [UCSC Family Browser]
SOURCE	NM_021025
SMD	Hs.249125
SAGE	Hs.249125
Amigo	process development
Amigo	component nucleus
Amigo	process regulation of transcription, DNA-dependent
Amigo	function transcription factor activity
PubGene	TLX3

Other databases

Probes

[Probe](#) [TLX3 Related clones \(RZPD - Berlin\)](#)

PubMed

[PubMed](#) [10 Pubmed reference\(s\) in LocusLink](#)

Bibliography

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Medline [11435718](#)

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Medline [14504110](#)

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Contributor(s)

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