

Gene Section

Short Communication

LDB1 (LIM domain binding 1)

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Identity

Hugo: LDB1

Other names: CLIM2; NLI

Location: 10q24

DNA/RNA

Description

7 kb; 11 exons.

Transcription

2292 nucleotides mRNA.

Protein

Description

375 amino acids; 42.8 kDa protein.

Expression

Widely expressed.

Localisation

Nuclear.

Function

LDB1 is a nuclear protein that contains an N-terminal dimerization domain and a C-terminal LIM interaction domain (LID). LDB1 binds to LIM-homeodomain (LIM-HD) and LIM-only (LMO) proteins. It acts as an adaptor protein that mediates interactions between different classes of transcription factors and their cofactors. LDB1 forms a complex with LKB1, LMO4, and GATA-6. The tumor suppressor LKB1 is mutated in Peutz-Jeghers syndrome and various sporadic cancers. A complex containing LDB1, LKB1, LMO4, and GATA-6 induces cyclin-dependent kinase inhibitor p21 expression. Targeted deletion of the Ldb1 gene in

mice displays multiple developmental defects that reveal a requirement of Ldb1 gene during normal development.

Implicated in

Oral squamous cell carcinoma

Oncogenesis

LDB1 and LMO4 are frequently detected in less-differentiated and metastasized squamous carcinoma, and overexpressed at the carcinoma invasive front.

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