

Gene Section

Mini Review

ITK (IL2-inducible T-cell kinase)

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Identity

Hugo: ITK

Other names: EMT; LYK; MGC126257; MGC126258; PSCTK2

Location: 5q33.3

DNA/RNA

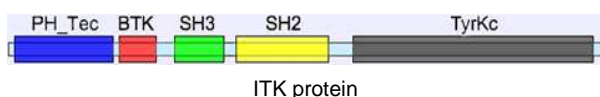
Description

Centromere to telomere orientation; Exons: 17.

Transcription

Transcript length: 4,419 bps.

Protein



ITK protein

Description

Number of residues: 620 residues; Molecular weight: 71 kDa; Conserved domains: PH-Tec, Tec pleckstrin homology (PH) domain; BTK, Bruton's tyrosine kinase Cys-rich motif; SH3, Src homology 3 domains; SH2, Src homology 2 domains; TyrKc, Tyrosine kinase, catalytic domain.

Function

Although originally described as an important component of proximal TCR signaling pathways, the Tec family tyrosine kinase Itk has become increasingly recognized for its important role in regulating T-helper-cell differentiation. Itk has a crucial role in Th2 responses, both the protective responses to pathogenic infections in addition to the pathological responses

resulting in allergic asthma. Itk is not required for Th2 differentiation per se, but effector Th2 cytokine production during recall responses is severely impaired in the absence of Itk.

Implicated in

t(5;9)(q33;q22)

Disease

Peripheral T-cell lymphomas, unspecified (PTCL-u). ITK-SYK transcripts were detected in 5 of 30 (17%) unspecified peripheral T-cell lymphomas, but not in cases of angioimmunoblastic T-cell lymphoma (n=9) and ALK-negative anaplastic large cell lymphoma (n=7)

Hybrid/Mutated Gene

N-terminal pleckstrin homology domain and proline-rich region of ITK fused to the tyrosine kinase domain of SYK.

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