IL3 (interleukin-3)

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Identity
HGNC (Hugo): IL3
Location: 5q31

DNA/RNA
Description
5 exons.

Transcription
674 bp transcript with a 458 bp of coding sequence.

Protein
Description
152 amino acids; 17 kDa.

Expression
IL3 is produced by activated T cells, monocytes/macrophages and stroma cells.

Function
Cytokine; multipotent hematopoietic growth factor; induces proliferation, maturation and probably self-renewal of pluripotent hematopoietic stem cells and cells of myeloid, erythroid and megakaryocytic lineages; IL-3 plays a more specialized role on basophil and mast cells; role through activation of the IL-3 receptor (IL-3R) complex consisting of alpha and beta subunits, which in turn induces activation of JAK2/STAT5, and induction of c-myc (cell-cycle progression and DNA synthesis), and activation of the Ras pathway (suppression of apoptosis); IL3 and GM-CSF have overlapping but distinct biological properties.

Implicated in
\[ t(5;14)(q31;q32) \]

Disease
B-cell acute lymphoblastic leukemia (ALL) with hypereosinophilia.

Prognosis
Poor.

Cytogenetics
t(5;14) may be the sole anomaly or accompanied with other anomalies.

Hybrid/Mutated gene
Break in the promoter region of IL3 and in the Jh region of IgH.

Abnormal protein
The immunoglobulin gene promoter controls the expression of IL3.

Oncogenesis
Over-expression of IL3.

References


*This article should be referenced as such:*