

Synthetic hSDF-1-alpha

Cytokine: Pre-B-cell growth-stimulating factor

Molecular cloning and structure of a pre-B-cell growth-stimulating factor.

Generation and proliferation of early B-cell progenitors have been known to require stromal cell-derived molecules. A stromal cell line, PA6, was found to produce a soluble mediator, which was distinct from interleukin 7 (IL-7) and stem cell factor and supported the proliferation of a stromal cell-dependent pre-B-cell clone, DW34. A cDNA clone encoding this DW34 growth-stimulating factor was isolated by expression cloning. The nucleotide sequence contained a single substantial open reading frame of 267 nucleotides encoding an 89-amino acid polypeptide. The amino acid sequence of this cytokine, designated pre-B-cell growth-stimulating factor (PBSF), revealed that it is a member of intercrine alpha subfamily. Recombinant PBSF stimulated the proliferation of DW34 cells for itself and, furthermore, synergistically augmented the growth of DW34 as well as bone marrow B-cell progenitors in the presence of IL-7. Nagasawa *et al. Proc Natl Acad Sci U S A.* 1994 Mar 15;91(6):2305-9.

SDF(Stromal cell-derived factor 1) Isoform Alpha (Cat. #: 030-21)

MNAKVVVVLV LVLTALCLSD GKPVLSYRC PCRFFESHVA RANVKHLKIL NTPNCALQIV
70 80 90
ARLKNNNRQV CIDPKLKWQ EYLEKALNKR FKM

SDF(Stromal cell-derived factor 1) Isoform Beta

MNAKVVVVLV LVLTALCLSD GKPVLSYRC PCRFFESHVA RANVKHLKIL NTPNCALQIV
70 80 90
ARLKNNNRQV CIDPKLKWQ EYLEKALNKR FKM

Structure and chromosomal localization of the human stromal cell-derived factor 1 (SDF1) gene.

Stromal cell-derived factors 1 alpha and 1 beta are small cytokines belonging to the intercrine CXC subfamily and originally isolated from a murine bone-marrow stroma cell line by the signal sequence trap method. cDNA and genomic clones of human SDF1 alpha and SDF1 beta (SDF1A and SDF1B) were isolated and characterized. cDNAs of SDF1 alpha and SDF1 beta encode proteins of 89 and 93 amino acids, respectively. SDF1 alpha and SDF1 beta sequences are more than 92% identical to those of the human counterparts. The genomic structure of the SDF1 gene revealed that human SDF1 alpha and SDF1 beta are encoded by a single gene and arise by alternative splicing. SDF1 alpha and SDF1 beta are encoded by 3 and 4 exons, respectively. Ubiquitous expression of the SDF1 gene, except in blood cells, was consistent with the presence of the GC-rich sequence in the 5'-flanking region of the SDF1 gene, as is often the case in the "housekeeping" genes. Although genes encoding other members of the intercrine family are localized on chromosome 4q or 17q, the human SDF1 gene was mapped to chromosome 10q by fluorescence in situ hybridization. Strong evolutionary conservation and unique chromosomal localization of the SDF1 gene suggest that SDF1 alpha and SDF1 beta may have important functions distinct from those of other members of the intercrine family. Shirozu *et al. Genomics.* 1995 Aug 10;28(3):495-500.

Catalog No.	Name	Size
030-21	Synthetic hSDF-1-alpha	100 µg
033-13	SDF-1-alpha / PBSF / CXCL12, Recombinant (Mouse)	10 µg
T-033-13	SDF-1-alpha / PBSF / CXCL12, Recombinant (Mouse)	10 µCi



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