



Recombinant Protein Technical Manual

Recombinant Mouse CXCL12/SDF Protein

RPES0224

Product Data:

Product SKU: RPES0224

Size: 10µg

Species: Mouse

Expression host: E. coli

Uniprot: P40224

Protein Information:

Molecular Mass: 8.1 kDa

AP Molecular Mass: 10 kDa

Tag:

Bio-activity:

Purity: > 95 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU per µg as determined by the LAL method.

Storage: Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

Shipping: This product is provided as lyophilized powder which is shipped with ice packs.

Formulation: Lyophilized from a 0.2 µm filtered solution of PBS, pH7.4.

Reconstitution: Please refer to the printed manual for detailed information.

Application:

Synonyms: Cxcl12;Stromal cell-derived factor 1;SDF;12-O-tetradecanoylphorbol 13-acetate repressed protein 1;TPAR1;C-X-C motif chemokine 12;Pre-B cell growth-stimulating factor;PBSF;Thymic lymphoma cell-stimulating factor;TLSF;Sdf1

Immunogen Information:

Sequence: Lys22-Lys89

Background:

Mouse Cxcl12 is a secreted and highly conserved protein which belongs to the intercrine alpha (chemokine Cx-C) family. CXCL12 is widely expressed in various organs including brain, kidney, skeletal muscle, heart, liver, and lymphoid organs. Cxcl12 activates the C-X-C chemokine receptor CXCR4 to induce a rapid and transient rise in the level of intracellular calcium ions and chemotaxis. It also binds to atypical chemokine receptor ACKR3 which activates the beta-arrestin pathway and acts as a scavenger receptor for SDF. Cxcl12 has several critical functions during embryonic development such as B-cell lymphopoiesis, myelopoiesis in bone marrow and heart ventricular septum formation. Cxcl12 plays an important role in acting as a positive regulator of monocyte migration and a negative regulator of monocyte adhesion via the LYN kinase. It stimulates migration of monocytes and T-lymphocytes through its receptors, CXCR4 and ACKR3, and decreases monocyte adherence to surfaces coated with ICAM, a ligand for beta-2 integrins. SDF1A/CXCR4 signaling axis inhibits beta-2 integrin LFA mediated adhesion of monocytes to ICAM through LYN kinase. It also plays a protective role after myocardial infarction, induces down-regulation and internalization of ACKR3 expressed in various cells and stimulates the proliferation of bone marrow-derived b progenitor cells in the presence of IL-7 as well as growth of the stromal cell-dependent B-cell clone DW34 cells.