Cytokines

Human Recombinant Fractalkine (CX3CL1)

Fractalkine

Catalog #	78051	5 µg
	78051.1	25 µg
	78051.2	1000 µg

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Product Description

Fractalkine (CX3CL1) is a unique chemokine belonging to the CX3C family, and is characterized by a C-X3-C cysteine motif within the chemokine domain, near the amino terminus of the protein (Bazan et al.). The chemokine domain is connected to an extended mucin-like stalk, followed by a transmembrane region, and a C-terminal intracellular domain (Imai et al.; Jones et al.). The protein signals through interaction with a single receptor, CX3CR1, expressed on monocytes, natural killer cells, T cells, microglia, and smooth muscle cells. Fractalkine is upregulated in endothelial cells by inflammatory signals and is synthesized as a membrane-bound molecule that mediates cell migration and adhesion (White & Greaves). Cleavage at the base of the stalk by metalloproteinases generates a soluble chemokine, which functions as a potent chemoattractant of target cells (Apostolakis & Spandidos; Garton et al.). Fractalkine has been implicated in pathology of inflammatory diseases, such as atherosclerosis and other vascular diseases, and has anti-apoptotic functions (White & Greaves).

Product Information

Alternative Names:	C3Xkine, Chemokine (C-X3-C motif) ligand 1, FKN, Neurotactin, NTN, NTT, SCYD1, Small inducible cytokine subfamily D member 1
Accession Number:	P78423
Amino Acid Sequence:	QHHGVTKCNI TCSKMTSKIP VALLIHYQQN QASCGKRAII LETRQHRLFC ADPKEQWVKD AMQHLDRQAA ALTRNGGTFE KQIGEVKPRT TPAAGGMDES VVLEPEATGE SSSLEPTPSS QEAQRALGTS PELPTGVTGS SGTRLPPTPK AQDGGPVGTE LFRVPPVSTA ATWQNSAPHQ PGPSLWAEAK TSEAPSTQDP STQASTASSP APEENAPSEG QRVWGQGQSP RPENSLEREE MGPVPAHTDA FQDWGPGSMA HVSVVPVSSE GTPSREPVAS GSWTPKAEEP IHATMDPQRL GVLITPVPDA QAATR
Predicted Molecular Mass:	50 - 75 kDa
Species:	Human
Formulation:	Lyophilized after dialysis against phosphate-buffered saline.
Source:	CHO

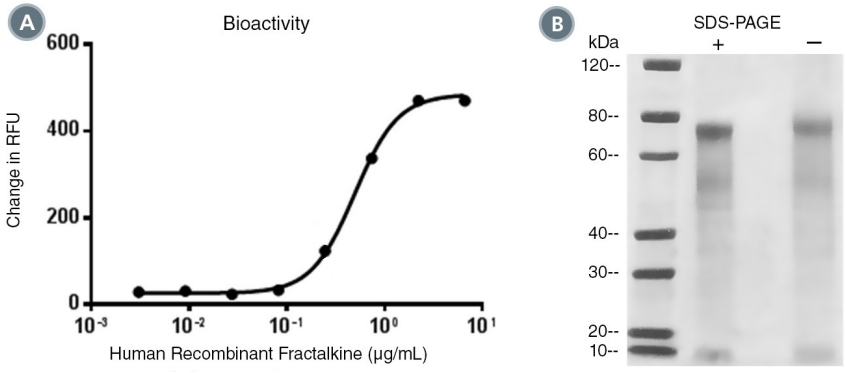
Specifications

Activity:	The specific activity is ≥ 666 units/mg (EC50 ≤ 1.5 µg/mL), as determined by Ca2+ mobilization assay in CHO-K1/Gα15/hCX3CR1 cells (human Gα15 and human CX3CR1 stably expressed in CHO-K1 cells).
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage:	Store at -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water or phosphate-buffered saline to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 week or at -20 to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant Fractalkine (CX3CL1) was tested by its ability to mobilize Ca2+ in CHO-K1/Gα15/hCX3CR1 cells (human Gα15 and human CX3CR1 stably expressed in CHO-K1 cells). The EC50 is defined as the effective concentration of the growth factor at which Ca2+ mobilization is at 50% of maximum. The EC50 in the above example is 0.47 ng/mL.
(B) 2 µg of Human Recombinant Fractalkine (CX3CL1) was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant Fractalkine (CX3CL1) has a predicted molecular mass of 50 - 75 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines, or contact us at techsupport@stemcell.com.

References

Apostolakis S & Spandidos D. (2013) Chemokines and atherosclerosis: focus on the CX3CL1/CX3CR1 pathway. Acta Pharmacol Sin 34(10): 1251–6.
Bazan JF et al. (1997) A new class of membrane-bound chemokine with a CX3C motif. Nature 385(6617): 640–4.
Garton KJ et al. (2001) Tumor necrosis factor-alpha-converting enzyme (ADAM17) mediates the cleavage and shedding of fractalkine (CX3CL1). J Biol Chem 276(41): 37993–8001.
Imai T et al. (1997) Identification and molecular characterization of fractalkine receptor CX3CR1, which mediates both leukocyte migration and adhesion. Cell 91(4): 521–30.
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