

Product Information

FRACTALKINE, EXTRACELLULAR DOMAIN

Mouse, Recombinant
Expressed in Sf 21 cells

Product Number **F 7551**

Product Description

Recombinant Mouse Fractalkine, Extracellular Domain, is produced from a DNA sequence encoding the extracellular domain of mouse fractalkine (amino acid residues 1 to 337) fused to a 6X histidine-tag at the C-terminus.¹ Based on amino-terminal sequencing, the N-terminus of the mature recombinant protein is blocked, consistent with the prediction that Gln 25 is the N-terminal residue. Recombinant mouse fractalkine, extracellular domain (predicted 319 amino acid residues) has a calculated molecular mass of approximately 34 kDa. Due to glycosylation, the recombinant protein migrates as an approximately 90 kDa protein in SDS-PAGE. With the exception of the stalk region, mouse and human fractalkine share greater than 75% amino acid sequence identity.

Fractalkine/CX3CL-1, also termed neurotactin, is a member of the delta chemokine subfamily that contains a unique CX₃C cysteine motif near the N-terminal.^{2, 3} Unlike other known chemokines, fractalkine is a type 1 membrane protein containing a chemokine domain tethered on a long mucin-like stalk.⁴ Native mouse fractalkine cDNA encodes a 395 amino acid residue precursor protein with a predicted 24 or an alternative 21 amino acid residue signal peptide, a 76 amino acid residue globular chemokine domain, a 239 amino acid residue stalk region (rich in Gly, Pro, Ser, and Thr and containing degenerate mucin-like repeats), a 19 amino acid residue transmembrane segment, and a 37 amino acid residue cytoplasmic domain. The extracellular domain of mouse and human fractalkine can be released as a soluble protein by proteolysis at the conserved dibasic motif proximal to the transmembrane region.

Fractalkine, a leukocyte chemoattractant, is expressed in various tissues including the brain, heart, lung, kidney, skeletal muscle, and testis. Recombinant extracellular fractalkine simulates the "shed" form of the chemokine and chemoattracts neutrophils and T-cells.

The expression of fractalkine is reported to be up-regulated in endothelial cells and microglia by inflammatory signals.⁴ CX3CR1, a specific receptor for fractalkine, mediates both leukocyte migration and adhesion.⁵ The gene for mouse fractalkine has been mapped to chromosome 11.

Reagents

Recombinant Mouse Fractalkine, Chemokine Domain, is supplied as approximately 25 µg of protein lyophilized from a 0.2 µm filtered solution in 30% acetonitrile and 0.1% trifluoroacetic acid (TFA) containing 1.25 mg of bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% bovine serum albumin. Prepare a stock solution of no less than 50 µg/ml.

Storage/Stability

Store at -20 °C. Upon reconstitution, store at 2 °C to 8 °C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

Product Profile

Recombinant Mouse Fractalkine, Extracellular Domain, is measured by its ability to chemoattract freshly isolated peripheral blood lymphocytes.

The ED₅₀ for this effect is approximately 0.06 to 0.6 µg/ml.

The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50 % increase in cell growth in a cell based bioassay.

Purity: > 97 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level is < 0.1 ng/µg protein as determined by the LAL (Limulus amoebocyte lysate) method.

References

1. Rossi, K.L., et al., Genomics, **47**, 163 (1998).
2. Mackay, C.R., Curr. Biol., **7**, 384 (1997).
3. Bazan, J.F., et al., Nature, **385**, 640 (1997)
4. Pan, Y., et al., Nature, **387**, 611 (1997).
5. Imai, T., et al., Cell, **91**, 521 (1997).

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