

Product Information

FRACTALKINE, EXTRACELLULAR DOMAIN

Rat, Recombinant
Expressed in Sf 21 cells

Product Number **F 8676**

Product Description

Recombinant Rat Fractalkine, Extracellular Domain, is produced from the extracellular domain of rat fractalkine (amino acid residues 1 to 334).¹ Based on N-terminal sequencing, the N-terminus of mature recombinant rat fractalkine is blocked, consistent with the prediction that Gln 25 is the N-terminal residue. Rat fractalkine variants with Gln 25 at the N-terminus have been shown to be approximately 100 times more active than variants with Leu 22 at the N-terminus. Recombinant mature rat fractalkine (predicted to contain 310 amino acid residues) has a calculated molecular mass of 33 kDa. Due to glycosylation, the recombinant protein migrates as an approximately 100 kDa protein in SDS-PAGE. With the exception of the stalk region, rat fractalkine shares 83% amino acid sequence identity with human and mouse fractalkine.

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 rat fractalkine cDNA encodes a 393 amino acid residue precursor protein with two alternative (21 amino acid or 24 amino acid residues) putative signal peptides, a 76 amino acid residue globular chemokine domain, a 238 amino acid residue stalk region (rich in Gly, Pro, Ser, and Thr and containing degenerate mucin-like repeats), a 19 amino acid residue trans membrane segment, and a 36 amino acid residue cytoplasmic domain. The extracellular domain can be released by proteolysis at the dibasic cleavage site proximal to the transmembrane to generate soluble fractalkine.

Fractalkine is expressed in various tissues including the brain, heart, lung, kidney, skeletal muscle, and testis. In rat brain, fractalkine expression is localized principally to neurons. 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

Reagent

Recombinant Rat Fractalkine, Extracellular Domain, is supplied as approximately 25 µg of protein lyophilized from a 0.2 µm filtered solution in phosphate-buffered saline 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 25 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 Rat Fractalkine, Extracellular Domain, is measured by its ability to induce chemotaxis of human peripheral blood lymphocytes.

The ED₅₀ for this effect is approximately 0.006 to 0.06 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. Harrison, J., et al., Proc. Natl. Acad. Sci. USA, **95**, 10896 (1998).
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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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