Recombinant Mouse Complement Component C5a

Catalog Number: 2150-C5/CF

DESCRIPTION

Source	*E. coli*-derived Asn679-Arg755, with an N-terminal Met Accession # P06684
N-terminal Sequence Analysis	Met
Predicted Molecular Mass	9.0 kDa

SPECIFICATIONS

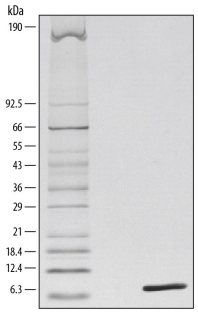
Activity	Measured by its ability to induce N-acetyl-β-D-glucosaminidase release from differentiated U937 human histiocytic lymphoma cells. Klos, A. *et al.* (1992) Biochemistry **31**:11274. The ED_{50} for this effect is typically 5-20 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

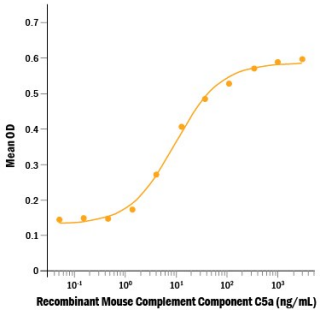
DATA

SDS-PAGE



1 µg/lane of Recombinant Mouse Complement Component C5a was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 9 kDa.

Bioactivity



Recombinant Mouse Complement Component C5a (Catalog # 2150-C5/CF) induces N-acetyl-β-D-glucosaminidase release from differentiated U937 human histiocytic lymphoma cells. The ED_{50} for this effect is typically 5-20 ng/mL.

BACKGROUND

Mouse Complement 5a (C5a) is an enzymatically generated glycoprotein that belongs to a family of structurally and functionally related proteins known as Anaphylatoxins. C5a is a 77 amino acid (aa) peptide that is created by the activity of C5a convertase on the C5 α-chain (1, 2). Mouse C5a has four α-helices, plus three intrachain disulfide bonds that create a triple loop structure (3). In serum, proteolytic processing removes the C-terminal arginine, creating a low activity C5a desArg77 molecule (1). Mouse C5a shares 60% and 82% aa sequence identity to human and rat C5a, respectively. C5a binds to a signaling G-protein coupled receptor (GPCR) (C5aR/CD88), inducing neutrophil chemotaxis and endothelial cell activation (1, 4). It also triggers an oxidative burst in macrophages and neutrophils, and induces release of histamine in basophils and mast cells (1, 4). Alternatively, it may also bind to a nonsignaling GPCR termed C5L2 whose function is yet to be determined (5).

References:

1. Gerard, C. and N.P. Gerard (1994) Annu. Rev. Immunol. **12**:775.
2. DiScipio, R.G. *et al.* (1983) J. Biol. Chem. **258**:10629.
3. Huber-Lang, M.S. *et al.* (2003) J. Immunol. **170**:6115.
4. Gerard, N.P. and C. Gerard, (2002) Curr. Opin. Immunol. **14**:705.
5. Okinaga, S. *et al.* (2003) Biochemistry **42**:9406.

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