

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Val484-Gly711
Accession # AAA59872

N-terminal Sequence Analysis Val484

Predicted Molecular Mass 25 kDa

SPECIFICATIONS

SDS-PAGE 30 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
Immobilized rhMSP β chain at 5 μ g/mL (100 μ L/well) can bind rhMSP R with a linear range of 2.34-150 ng/mL.

Endotoxin Level <0.10 EU per 1 μ g 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 μ m filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 μ g/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.

BACKGROUND

Macrophage stimulating protein (MSP), also known as HGF-like protein, and scatter factor-2, is a member of the HGF family of growth factors (1). MSP is secreted as an inactive single chain precursor (pro-MSP) that contains a PAN/APPLE-like domain, four kringle domains, and a peptidase S1 domain which lacks enzymatic activity (2). Human MSP shares 79% amino acid (aa) sequence identity with mouse MSP and 44% aa sequence identity with human HGF. Pro-MSP is secreted by hepatocytes under the positive and negative control of CBP in complex with either HNF-4 or RAR, respectively (3). Circulating pro-MSP is proteolytically cleaved in response to tissue injury to yield biologically active disulfide linked heterodimers consisting of a 45 - 62 kDa alpha and a 25 - 35 kDa beta chain (4, 5). Pro-MSP can be activated by MT-SP1, a transmembrane protease that is expressed on macrophages and is upregulated in many cancers (6). Heterodimeric MSP as well as the isolated beta chain bind to MSP R/Ron with high-affinity, although only heterodimeric MSP can induce receptor dimerization and signaling (7, 8). MSP induces macrophage and keratinocyte proliferation and osteoclast activation (9, 10). It also inhibits LPS- or IFN-induced iNOS and IL-12 expression by macrophages and prevents apoptosis of epithelial cells separated from the ECM (11, 12).

References:

1. Wang, M.-H. *et al.* (2002) *Scand. J. Immunol.* **56**:545.
2. Han, S. *et al.* (1991) *Biochemistry* **30**:9768.
3. Muraoka, R.S. *et al.* (1999) *Endocrinology* **140**:187.
4. Wang, M.-H. *et al.* (1996) *J. Clin. Invest.* **97**:720.
5. Nanney, L.B. *et al.* (1998) *J. Invest. Dermatol.* **111**:573.
6. Bhatt, A.S. *et al.* (2007) *Proc. Natl. Acad. Sci.* **104**:5771.
7. Wang, M.-H. *et al.* (1997) *J. Biol. Chem.* **272**:16999.
8. Danilkovitch, A. *et al.* (1999) *J. Biol. Chem.* **274**:29937.
9. Wang, M.-H. *et al.* (1996) *Exp. Cell Res.* **226**:39.
10. Kurihara, N. *et al.* (1998) *Exp. Hematol.* **26**:1080.
11. Morrison, A.C. *et al.* (2004) *J. Immunol.* **172**:1825.
12. Liu, Q.F. *et al.* (1999) *J. Immunol.* **163**:6606.