

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Gly27-Arg188
Accession # P49772.1

N-terminal Sequence Analysis Gly27

Predicted Molecular Mass 18 kDa

SPECIFICATIONS

SDS-PAGE Multiple bands between 18-32 kDa, reducing conditions

Activity Measured in a cell proliferation assay using BaF3 mouse pro-B cells transfected with mouse Flt-3. The ED₅₀ for this effect is typically 0.4-2.4 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 Acetonitrile and TFA with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 50 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

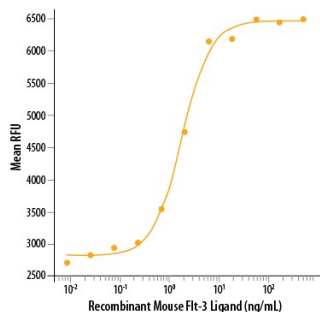
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

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.

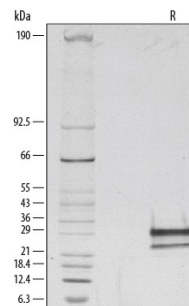
DATA

Bioactivity



Recombinant Mouse Flt-3 Ligand (Catalog # 427-FL) stimulates cell proliferation in the BaF3 mouse pro-B cell line transfected with mouse Flt-3. The ED₅₀ for this effect is 0.4-2.4 ng/mL.

SDS-PAGE



1 µg/lane of Recombinant Mouse Flt-3 Ligand was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing multiple bands between 18-32 kDa. Multiple bands are due to variable glycosylation of the protein.

BACKGROUND

Flt-3 Ligand, also known as FL, is an α -helical cytokine that promotes the differentiation of multiple hematopoietic cell lineages (1-3). Mature mouse Flt-3 Ligand consists of a 161 amino acid (aa) extracellular domain (ECD) with a cytokine-like domain and a juxtamembrane tether region, a 21 aa transmembrane segment, and a 22 aa cytoplasmic tail (4-6). Within the ECD, mouse Flt-3 Ligand shares 71% and 81% aa sequence identity with human and rat Flt-3 Ligand, respectively. Mouse and human Flt-3 Ligand show cross-species activity (4, 5, 7). Flt-3 Ligand is expressed as a noncovalently-linked dimer by T cells and bone marrow and thymic fibroblasts (1, 8). Each 36 kDa chain carries approximately 12 kDa of N- and O-linked carbohydrates (8). Alternate splicing and proteolytic cleavage of the transmembrane form can generate a soluble 30 kDa fragment that includes the cytokine domain (4, 8). Alternate splicing of mouse Flt-3 Ligand also generates a membrane-associated isoform with a 57 aa substitution following the cytokine domain (4, 5, 8, 9). Both transmembrane and soluble Flt-3 Ligand signal through the tyrosine kinase receptor Flt-3/Flk-2 (3 - 6). Flt-3 Ligand induces the expansion of monocytes and immature dendritic cells as well as early B cell lineage differentiation (2, 10). It synergizes with IL-3, GM-CSF, and SCF to promote the mobilization and myeloid differentiation of hematopoietic stem cells (4, 5, 7). It cooperates with IL-2, -6, -7, and -15 to induce NK cell development and with IL-3, -7, and -11 to induce terminal B cell maturation (1, 11). Animal studies also show Flt-3 Ligand to reduce the severity of experimentally induced allergic inflammation (12).

References:

1. Wodnar-Filipowicz, A. (2003) *News Physiol. Sci.* **18**:247.
2. Dong, J. *et al.* (2002) *Cancer Biol. Ther.* **1**:486.
3. Gilliland, D.G. and J.D. Griffin (2002) *Blood* **100**:1532.
4. Hannum, C. *et al.* (1994) *Nature* **368**:643.
5. Lyman, S.D. *et al.* (1993) *Cell* **75**:1157.
6. Savvides, S.N. *et al.* (2000) *Nat. Struct. Biol.* **7**:486.
7. Lyman, S.D. *et al.* (1994) *Blood* **83**:2795.
8. McClanahan, T. *et al.* (1996) *Blood* **88**:3371.
9. Lyman, S.D. *et al.* (1995) *Oncogene* **10**:149.
10. Diener, K.R. *et al.* (2008) *Exp. Hematol.* **36**:51.
11. Farag, S.S. and M.A. Caligiuri (2006) *Blood Rev.* **20**:123.
12. Edwan, J.H. *et al.* (2004) *J. Immunol.* **172**:5016.