Recombinant Mouse Jagged 1 Fc Chimera

Catalog Number: 10969-JG

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived mouse Jagged 1 protein

Mouse Jagged 1 (Ser32-Ile335) Accession # Q9QXX0.1	IEGRMDP	Mouse IgG_{2a} (Glu98-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Ser32
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	61 kDa

SPECIFICATIONS

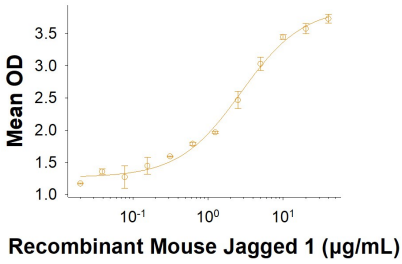
SDS-PAGE	70-78 kDa, reducing conditions.
Activity	Measured by the ability of the immobilized protein to enhance BMP-2 induced alkaline phosphatase activity in C3H10T1/2 mouse embryonic fibroblast cells. Nobta, M. *et al.* (2005) J. Biol. Chem. **280**:15842. The ED_{50} for this effect is 1.00-6.00 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in 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.

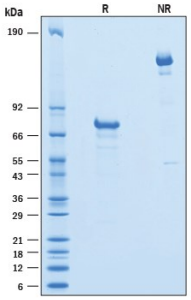
DATA

Bioactivity



Recombinant Mouse Jagged 1 Fc Chimera Protein Bioactivity. Immobilized Recombinant Mouse Jagged 1 Fc Chimera (Catalog # 10969-JG) enhances BMP-2 (Catalog # 355-BM) induced alkaline phosphatase activity in C3H10T1/2 mouse embryonic fibroblast cells. The ED_{50} for this effect is 1.00-6.00 ug/mL.

SDS-PAGE



Recombinant Mouse Jagged 1 Fc Chimera Protein SDS-PAGE. 2 µg/lane of Recombinant Mouse Jagged 1 Fc Chimera Protein (Catalog # 10969-JG) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 70-78 kDa and 140-160 kDa, respectively.

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BACKGROUND

Jagged 1 is a 180 kDa type I transmembrane glycoprotein and member of the Delta-Serrate-Lag-2 (DSL) family of ligands that activate LIN12/Notch proteins (1). Mouse Jagged 1 is synthesized as a precursor protein that contains a 33 amino acid (aa) signal sequence, a 1034 aa extracellular region, a 26 aa transmembrane (TM) segment and a 125 aa cytoplasmic domain. The large extracellular region has a DSL (Delta, Serrate, Lag-2 consensus sequence) domain followed by 16 EGF-like repeats (2). Mouse Jagged 1 shows 98% and 99% aa identity to human and rat Jagged 1 extracellular domains respectively. The extracellular region of Jagged 1 binds to multiple Notch receptors on the cell surface as well as in solid phase binding studies. The DSL motif is necessary for binding to Notch receptors and the EGF repeats modulate the affinity of the interaction with Notch receptors (3). Notch signaling is implicated in many developmental processes in a variety of cell types. Jagged-Notch signaling specifies cell fate, regulates pattern formation, defines boundaries between different cell types, and modulates cell proliferation and differentiation. Some specific areas where Jagged is involved include hematopoiesis, myogenesis, neurogenesis and development of the vasculature (4). For instance, soluble non-transmembrane forms of Jagged1 influence behavior in fibroblast cells leading to characteristics exhibited by endothelial cells during angiogenesis (5). Soluble Jagged 1 is also capable of maintaining the survival and enhancing the expansion of human stem cells that are capable of reconstituting hematopoietic lineages *in vivo* (6). Furthermore, Jagged 1 is implicated in human disease: Alagille syndrome, an autosomal dominant disorder characterized by defects in liver, heart, eye, skeletal, craniofacial tissues, and kidney, is caused by mutations in Jagged 1 (7). Depending on cell types and how soluble forms of the ligand are presented, ligand binding can result in activation or inhibition of Notch signaling (8).

References:

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