

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. Human Jagged 1 is synthesized as a 1218 amino acid (aa) precursor that contains a 33 aa signal sequence, a 1034 aa extracellular domain (ECD), a 26 aa transmembrane segment, and a 125 aa cytoplasmic region (SwissProt # P78504). The ECD contains a DSL domain (aa 185 - 229), a cysteine-rich region, 15 EGF-like repeats, of which many bind calcium, and nine potential sites for N-linked glycosylation. Mature human Jagged 1 is 97% and 96% aa identical to mature mouse and rat Jagged 1, respectively. Jagged 1 is widely expressed in adult and fetal tissues. Jagged-Notch signaling specifies cell fate, regulates pattern formation, defines boundaries between different cell types, and modulates cell proliferation and differentiation, especially during hematopoiesis, myogenesis, neurogenesis, and development of vasculature (1 - 8). Mutations in human Jagged 1 are the cause of Alagille syndrome, an autosomal-dominant disorder characterized by intrahepatic cholestasis and abnormalities of heart, eye, vertebrae, as well as characteristic facial appearance (9 - 10).

References:

1. Sainson, R.C. and A.L. Harris (2008) *Angiogenesis* 11:41.
2. Cordle, J. *et al.* (2008) *Nat. Struct. Mol. Biol.* 15:849.
3. Artavamis-Tsokanas, S. *et al.* (1999) *Science* 284:770.
4. Lai, E.C. (2004) *Development* 131:965.
5. Milner, L.A. *et al.* (1994) *Blood* 83:2057.
6. Nyfeler, Y. *et al.* (2005) *EMBO J.* 24:3504.
7. Linheng, L. *et al.* (1998) *Immunity* 8:43.
8. Iso, T. *et al.* (2003) *Arterioscler. Thromb. Vasc. Biol.* 23:543.
9. Oda, T. *et al.* (1997) *Nat. Genet.* 16:235.
10. Oda, T. *et al.* (1997) *Genomics* 43:376.

Description

Source	Chinese Hamster Ovary cell line, CHO-derived		
	Human Jagged 1 (Ser32 - Ser1046) Accession # P78504	IEGRMD	Human IgG ₁ (Pro100 - Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Ser32		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	137 kDa		

Specifications

SDS-PAGE	170 - 180 kDa, under reducing conditions
Activity	Measured by the ability of immobilized protein to enhance BMP-2 induced alkaline phosphatase activity in C3H10T1/2 mouse cells. Nobta, M. <i>et al.</i> (2005) <i>J. Biol. Chem.</i> 280:15842. The ED ₅₀ for this effect is typically 0.5 - 2.0 µg/mL.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS and EDTA. See Certificate of Analysis for details.

Preparation and Storage

Reconstitution	Reconstitute at 200 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. <ul style="list-style-type: none"> ● 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.

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