

Jagged 1 Protein, Human, Recombinant (His)

General Information

Synonyms:	CD339;AHD;HJ1;AGS;AWS;JAGL1;Jagged 1
Protein Construction:	A DNA sequence encoding the human JAG1 (NP_000205.1) extracellular domain (Met 1-Ser 1046) was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Gln 34
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P78504-1
Molecular Weight:	112 kDa (predicted); 160 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by the ability of the immobilized protein to enhance BMP2-induced alkaline phosphatase activity in C3H10T1/2 mouse embryonic fibroblast cells. The ED50 for this effect is typically 4-20 µg/mL.
Purity:	≥ 95 % as determined by SDS-PAGE. ≥ 95 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:	Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Protein Jagged 1, also known as JAG1, JAGL1, and CD339, is a single-pass type I membrane protein that contains 1 DSL domain and 15 EGF-like domains. JAG1/Jagged 1 is widely expressed in adult and fetal tissues. The expression of JAG1/Jagged 1 is up-regulated in cervical squamous cell carcinoma. JAG1/Jagged 1 is also expressed in bone

marrow cell line HS-27a which supports the long-term maintenance of immature progenitor cells. JAG1/Jagged 1 is a ligand for multiple Notch receptors. It is involved in the mediation of Notch signaling. JAG1/Jagged 1 may be involved in cell-fate decisions during hematopoiesis. JAG1/Jagged 1 seems to be involved in the early and late stages of mammalian cardiovascular development. It inhibits myoblast differentiation and enhances fibroblast growth factor-induced angiogenesis. Defects in JAG1/Jagged 1 are the cause of Alagille syndrome type 1 (ALGS1). Alagille syndrome is an autosomal dominant multisystem disorder defined clinically by hepatic bile duct paucity and cholestasis in association with cardiac, skeletal, and ophthalmologic manifestations. Defects in JAG1/Jagged 1 are also a cause of tetralogy of Fallot (TOF). TOF is a congenital heart anomaly that consists of pulmonary stenosis, ventricular septal defect, dextroposition of the aorta (aorta is on the right side instead of the left), and hypertrophy of the right ventricle. This condition results in a blue baby at birth due to inadequate oxygenation.

Reference

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