

## Podoplanin Protein, Mouse (HEK293, Fc)

Cat. No.:	HY-P71219
Synonyms:	Podoplanin; Aggrus; Glycoprotein 38; Gp38; PA2.26 antigen; T1-alpha; T1A
Species:	Mouse
Source:	HEK293
Accession:	Q62011 (G23-K133)
Gene ID:	14726
Molecular Weight:	55-70 kDa

### PROPERTIES

AA Sequence	<p>           G T I G V N E D D I    V T P G T G D G M V    P P G I E D K I T T    T G A T G G L N E S            T G K A P L V P T Q    R E R G T K P P L E    E L S T S A T S D H    D H R E H E S T T T            V K V V T S H S V D    K K T S H P N R D N    A G D E T Q T T D K    K         </p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

Background	<p>Podoplanin protein mediates diverse effects on cell migration and adhesion through its interactions with various partners. During development, it plays a crucial role in the separation of blood and lymphatic vessels by binding to CLEC1B, triggering CLEC1B activation in platelets and leading to platelet activation and/or aggregation. Conversely, interaction with CD9 attenuates platelet aggregation and pulmonary metastasis induced by Podoplanin. In cell migration and adhesion, Podoplanin exhibits multifaceted functions through interactions with MSN or EZR, promoting epithelial-mesenchymal transition, ERZ phosphorylation, and triggering RHOA activation, ultimately increasing cell migration and invasiveness. Binding with CD44 promotes directional cell migration in epithelial and tumor cells. In lymph nodes, Podoplanin controls fibroblastic reticular cells (FRCs) adhesion to the extracellular matrix and contraction of the actomyosin. Engagement of CLEC1B by Podoplanin in FRCs promotes relaxation by blocking lateral membrane interactions, leading to the reduction of</p>
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ERM proteins and MYL9 activation. Additionally, Podoplanin interacts with LGALS8, possibly participating in connecting the lymphatic endothelium to the surrounding extracellular matrix. In keratinocytes, Podoplanin induces changes in cell morphology, including elongated shape, membrane protrusions, actin cytoskeleton reorganization, increased motility, and decreased cell adhesion. It also plays a role in controlling invadopodia stability and maturation in tumor cells, contributing to efficient degradation of the extracellular matrix. Podoplanin is required for normal lung cell proliferation and alveolus formation at birth, but it does not function as a water channel or a regulator of aquaporin-type water channels and has no effect on folic acid or amino acid transport. It forms homodimers and interacts with various proteins, including CLEC1B, CD9, LGALS8, HSPA9, CD44, MSN, EZR, and CCL21, each interaction contributing to different aspects of Podoplanin's multifaceted functions.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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