

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human Podoplanin protein		
	Human Podoplanin (Glu97–Lys199) & (Ala99–Lys199) Accession # NP_006465.3	IEGRMD	Human IgG ₁ (Pro100–Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Glu97 & Ala99		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	37.1 kDa		

SPECIFICATIONS

SDS-PAGE	60-65 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Immobilized Recombinant Human Podoplanin Fc Chimera (Catalog # 3670-PL) can bind Recombinant Human CLEC-2 (Catalog # 1718-CL) with an estimated $K_d < 4$ nM.
Endotoxin Level	<0.01 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. 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.

BACKGROUND

Podoplanin, also known as glycoprotein 36 (gp36), PA2.26 antigen, T1-alpha (T1A), and aggrus, is a 36 kDa type I transmembrane sialoglycoprotein and member of the Podoplanin family (1-2). Podoplanin has three potential splice variants, the longest of which is represented by a 238 amino acid (aa) precursor (NP_006465). It contains an undefined signal sequence, a 22 aa transmembrane segment (aa 207-228) and a short cytoplasmic tail (aa 229-238). The ECD contains abundant Ser/Thr residues that could serve as potential O-linked glycosylation sites. The cytoplasmic tail contains putative sites for protein kinase C phosphorylation (2-3). There are two potential alternate start sites at Met 77 (Swiss Prot #: Q86YL7) and Met 119 (EAW51692) that generate short forms. The 162 aa short form Podoplanin precursor shares 47% aa identity with mouse Podoplanin. Podoplanin is expressed on glomerular epithelial cells (podocytes), type I lung alveolar cells, lymphatic endothelial cells (4-5), and numerous tumors, including colorectal tumors (3), squamous cell carcinomas (4, 6), testicular seminoma (7), and brain tumors (8-10). One study shows high expression of Podoplanin mRNA in placenta, lung, skeletal muscle, and heart, and weaker levels in brain, kidney, and liver (1). Podoplanin is the ligand for C-type lectin-like receptor 2 (CLEC-2) (2). Their association is dependent on sialic acid on O-glycans of Podoplanin (2). Through its association with CLEC-2, Podoplanin induces platelet aggregation and tumor metastasis (2). Podoplanin is also necessary for lymphatic vessel formation, normal lung cell proliferation and alveolus formation at birth (2).

References:

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