

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived human Protein S/PROS1 protein
Ala42-Trp670, with a C-terminal 10-His tag
Accession # P07225

N-terminal Sequence Analysis Ala42

Predicted Molecular Mass 71 kDa

SPECIFICATIONS

SDS-PAGE 66-93 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
When Recombinant Human Tyro3/Dtk Fc Chimera (Catalog # 859-DK) is immobilized at 1 µg/mL, 100 µL/well, Recombinant Human Protein S/PROS1 binds with an ED₅₀ of 0.2-1.2 µg/mL.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Lyophilized from a 0.2 µm filtered solution in MES, NaCl and CaCl₂. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 1 mg/mL in water.

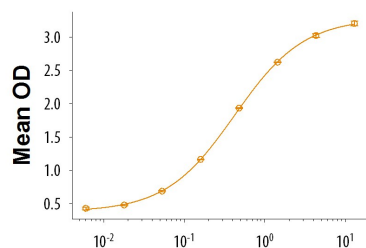
Shipping The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

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 Human Protein S/PROS1 (µg/mL)

When Recombinant Human Tyro3/Dtk Fc Chimera (Catalog # 859-DK) is immobilized at 1 µg/mL, 100 µL/well, Recombinant Human Protein S/PROS1 (Catalog # 9489-PS) binds with an ED₅₀ of 0.2-1.2 µg/mL.

BACKGROUND

Anticoagulant Protein S (PROS1) is a 71 kDa plasma vitamin K-dependent glycoprotein characterized by the presence of the post-translational modification of specific glutamic acid residues to gamma-carboxyglutamic acid (Gla) in the N-terminal region. In addition to the N-terminal Gla domain, mature PROS1 contains a thrombin-sensitive thumb loop, four tandem EGF-like domains and a C-terminal sex hormone-binding globulin (SHBG) domain composed of two Laminin G (LG) domains (1). Human PROS1 shares 80% amino acid sequence identity with mouse PROS1. Hundreds of mutations have been reported throughout all the domains of the protein, typically resulting in PROS1 deficiency and an increase in the risk of thrombophilia (2, 3). PROS1 is expressed in many cell types supporting its reported involvement in multiple biological processes that include coagulation, apoptosis, cancer development and progression, and the innate immune response (4-9). PROS1 exists in plasma both in complex with C4b-binding protein (C4BP) (60%) and in a free form (40%). Both forms of PROS1 have anti-coagulant activity either directly through inhibition of Factor X systems and prothrombinase while in complex with C4BP (5, 10) or in its well-established role as a cofactor of activated protein C (APC) inactivation of procoagulants FVa and FVIIIa (4). The free form of PROS1 is also a ligand for a subfamily of receptor tyrosine kinases known as TAMs, which is composed of TYRO3, AXL, and MERTK (11). PROS1 binds these tyrosine kinase receptors through its LG domains to activate downstream signaling pathways involved in tumor development and progression (7, 8, 11, 12).

References:

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