

DESCRIPTION

Source Chinese Hamster Ovary cell line, CHO-derived
Ala42-Arg669, with a C-terminal 10-His tag
Accession # Q08761

N-terminal Sequence Analysis Ala42

Predicted Molecular Mass 71 kDa

SPECIFICATIONS

SDS-PAGE 71-88 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
When Recombinant Mouse Tyro3/Dtk Fc Chimera (Catalog # 759-DT) is immobilized at 1 µg/mL, 100 µL/well, Recombinant Mouse Protein S/PROS1 binds with an ED₅₀ of 0.04-0.24 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 HEPES, NaCl, and CaCl₂. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 500 µg/mL in water.

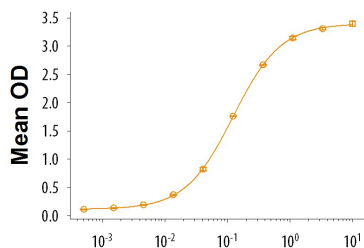
Shipping The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

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

Binding Activity



When Recombinant Mouse Dtk Fc Chimera (Catalog # 759-DT) is immobilized at 1 µg/mL, 100 µL/well, Recombinant Mouse Protein S/PROS1 (Catalog # 9740-PS) binds with an ED₅₀ of 0.04-0.24 µg/mL.

Recombinant Mouse Protein S (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). Mouse PROS1 shares 80% aa sequence identity with human PROS1. Hundreds of mutations in humans 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 anticoagulant 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 PROS-1 is also a ligand for a subfamily of receptor tyrosine kinases known as TAMs, which is composed of TYRO3, AXL, and MERTK (11). PROS-1 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:

1. Dahlback, B. *et al.* (1986) *Proc. Natl. Acad. Sci.* **83**:4199.
2. Garcia de Frutos, P. *et al.* (2007) *J. Thromb. Haemost.* **98**:543.
3. Heeb, M. J. (2008) *Expert Rev. Hematol.* **1**:9.
4. Walker, F.J. (1984) *Sem. Thromb. Hemosta.* **10**:131.
5. Heeb, M. J. *et al.* (2004) *J. Thromb. Haemost.* **2**:1766.
6. Che Mat, M. F. (2016) *Int. J. Oncol.* **49**:2359.
7. Abboud-Jarrous, G. *et al.* (2017) *Oncotarget.* **8**:13986.
8. Qin, J. *et al.* (2016) *Sci. Rep.* **6**:26662.
9. Davra, V. *et al.* (2016) *Cancers (Basel).* **8**:E107.
10. Hackeng, T. M. *et al.* (1994) *J. Biol. Chem.* **269**:21051.
11. Tsou, W.I. *et al.* (2014) *J. Biol. Chem.* **289**:25750.
12. Linger, R.M.A. *et al.* (2008) *Adv. Cancer Res.* **100**:35.