Recombinant Mouse Glycoprotein V/CD42d

Catalog Number: 6990-GP

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Met1-Gly522 with a C-terminal 6-His tag Accession # NP_032174
N-terminal Sequence Analysis	Gln17
Structure / Form	Dimer
Predicted Molecular Mass	57.5 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	70-90 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Mouse Glycoprotein V/CD42d is coated at 5 µg/mL, the concentration of Recombinant Human vWF-A2 (Catalog # 2764-WF) that produces 50% optimal binding response is found to be approximately 0.25-1.25 µg/mL.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>95%, 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 500 µg/mL in 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.** ● 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

Platelet Glycoprotein V (GPV or GP5, designated CD42d) is an 83 kDa type I transmembrane (TM) glycoprotein of the leucine-rich repeat (LRR) family (1, 2). It is expressed exclusively within the platelet / megakaryocyte lineage, where it noncovalently interacts with other platelet TM LRR proteins, GPIbα/β and GPIX, at a ratio of one GPV to two of each other subunit (2). The GPI-V-IX complex tethers platelets to von Willebrand factor on the surface of injured endothelial cells. Absence of the complex results in Bernard-Soulier syndrome, a rare bleeding disorder (1 - 3). The mouse GPV cDNA encodes 567 amino acids (aa), including a 16 aa signal sequence, a 506 aa extracellular domain (ECD) containing 15 LRR, a 21 aa TM sequence, and a short (24 aa) cytoplasmic tail that binds calmodulin in resting, but not activated platelets. The mouse GPV ECD shares 70%, 87%, 68 and 67% aa identity with human, rat, equine and bovine GPV, respectively. GPV can form soluble fragments of 80 kDa by ADAM10 or ADAM17 cleavage after L508, or 69 kDa by thrombin cleavage after R476 (1, 4, 5). High circulating soluble GPV may be an indicator of platelet activation, but may also be caused by high doses of aspirin (6 - 8). The function of GPV is not entirely clear. Deletion of GPV in mice does not produce any obvious change to surface expression or function of GPIb and GPIX, but surface expression of GPV requires GPIb (9, 10). Deletion studies also indicate that GPV may play a minor role in collagen adhesion, and may modify platelet aggregation in response to thrombin (3, 11 - 15).

References:

1. Ravanat, C. *et al.* (1997) Blood **89**:3253.
2. Katsutani, S. *et al.* (1998) Thromb. Res. **92**:43.
3. Ozaki, Y. *et al.* (2005) J. Thromb. Haemost. **3**:1745.
4. Rabie, T. *et al.* (2005) J. Biol. Chem. **280**:14462.
5. Gardiner, E.E. *et al.* (2007) J. Thromb. Haemost. **5**:1530.
6. Wolff, V. *et al.* (2005) Stroke **36**:e17.
7. Javela, K. *et al.* (2005) Transfusion **45**:1504.
8. Aktas, B. *et al.* (2005) J. Biol. Chem. **280**:39716.
9. Kahn, M.L. (1999) Blood **94**:4112.
10. Strassel, C. *et al.* (2004) Eur. J. Biochem. **271**:3671.
11. Nonne, C. et *al.* (2008) J. Thromb. Haemost. **6**:210.
12. Moog, S. *et al.* (2001) Blood **98**:1038.
13. Ramakrishnan, V. *et al.* (1999) Proc. Natl. Acad. Sci. USA **96**:13336.
14. Ni, H. *et al.* (2001) Blood **98**:368.
15. Andrews, R.K. *et al.* (2001) Blood **98**:681.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449