

# VWF (VW28-1): sc-59810

## BACKGROUND

Von Willebrand disease is a congenital bleeding disorder caused by defects in the von Willebrand factor protein (VWF). VWF is a multimeric glycoprotein that is found in endothelial cells, plasma and platelets, and it is involved in the coagulation of blood at injury sites. VWF acts as a carrier protein for Factor VIII, a cofactor required for coagulation, and it promotes platelet adhesion and aggregation. Several factors are known to stimulate the binding of VWF to platelets, including glycoprotein 1b, ristocetin, botrocetin, collagen, sulphatides and heparin. Of the several domains contained within VWF, the A1, A2 and A3 domains have been shown to mediate this activation. VWF is thought to undergo a variety of posttranslational modifications that influence the affinity and availability for Factor VIII, including cleavage of the propeptide and formation of N-terminal intersubunit disulfide bonds.

## REFERENCES

1. Wise, R.J., et al. 1991. The role of von Willebrand factor multimers and propeptide cleavage in binding and stabilization of factor VIII. *J. Biol. Chem.* 266: 21948-21955.
2. Fischer, B.E., et al. 1996. Effect of multimerization of human and recombinant von Willebrand factor on platelet aggregation, binding to collagen and binding of coagulation factor VIII. *Thromb. Res.* 84: 55-66.
3. Ward, C.M., et al. 1997. Binding of the von Willebrand factor A1 domain to histone. *Thromb. Res.* 86: 469-477.
4. Mazurier, C., et al. 1998. Molecular genetics of von Willebrand disease. *Ann. Genet.* 41: 34-43.
5. Jenkins, P.V., et al. 1998. Molecular modeling of ligand and mutation sites of the type A domains of human von Willebrand factor and their relevance to von Willebrand's disease. *Blood* 91: 2032-2044.
6. Bendetowicz, A.V., et al. 1998. Binding of factor VIII to von Willebrand factor is enabled by cleavage of the von Willebrand factor propeptide and enhanced by formation of disulfide-linked multimers. *Blood* 92: 529-538.

## CHROMOSOMAL LOCATION

Genetic locus: VWF (human) mapping to 12p13.31; Vwf (mouse) mapping to 6 F3.

## SOURCE

VWF (VW28-1) is a mouse monoclonal antibody raised against full length VWF from plasma of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

VWF (VW28-1) is recommended for detection of VWF of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for VWF siRNA (h): sc-36828, VWF siRNA (m): sc-36829, VWF shRNA Plasmid (h): sc-36828-SH, VWF shRNA Plasmid (m): sc-36829-SH, VWF shRNA (h) Lentiviral Particles: sc-36828-V and VWF shRNA (m) Lentiviral Particles: sc-36829-V.

Molecular Weight of VWF: 250 kDa.

Positive Controls: human platelet whole cell lysate: sc-363773 or HUV-EC-C whole cell lysate: sc-364180.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

## SELECT PRODUCT CITATIONS

1. Wu, X., et al. 2008. Ageing-exaggerated proliferation of vascular smooth muscle cells is related to attenuation of Jagged1 expression in endothelial cells. *Cardiovasc. Res.* 77: 800-808.
2. Wang, Z., et al. 2012. Rapid vascularization of tissue-engineered vascular grafts *in vivo* by endothelial cells in co-culture with smooth muscle cells. *J. Mater. Sci. Mater. Med.* 23: 1109-1117.
3. Chen, Y., et al. 2015. Icaritin intervenes in cardiac inflammaging through upregulation of SIRT6 enzyme activity and inhibition of the NFκB pathway. *Biomed Res. Int.* 2015: 895976

## RESEARCH USE

For research use only, not for use in diagnostic procedures.



See **VWF (C-12): sc-365712** for VWF antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647.