INTER ARRAY

Contact Us

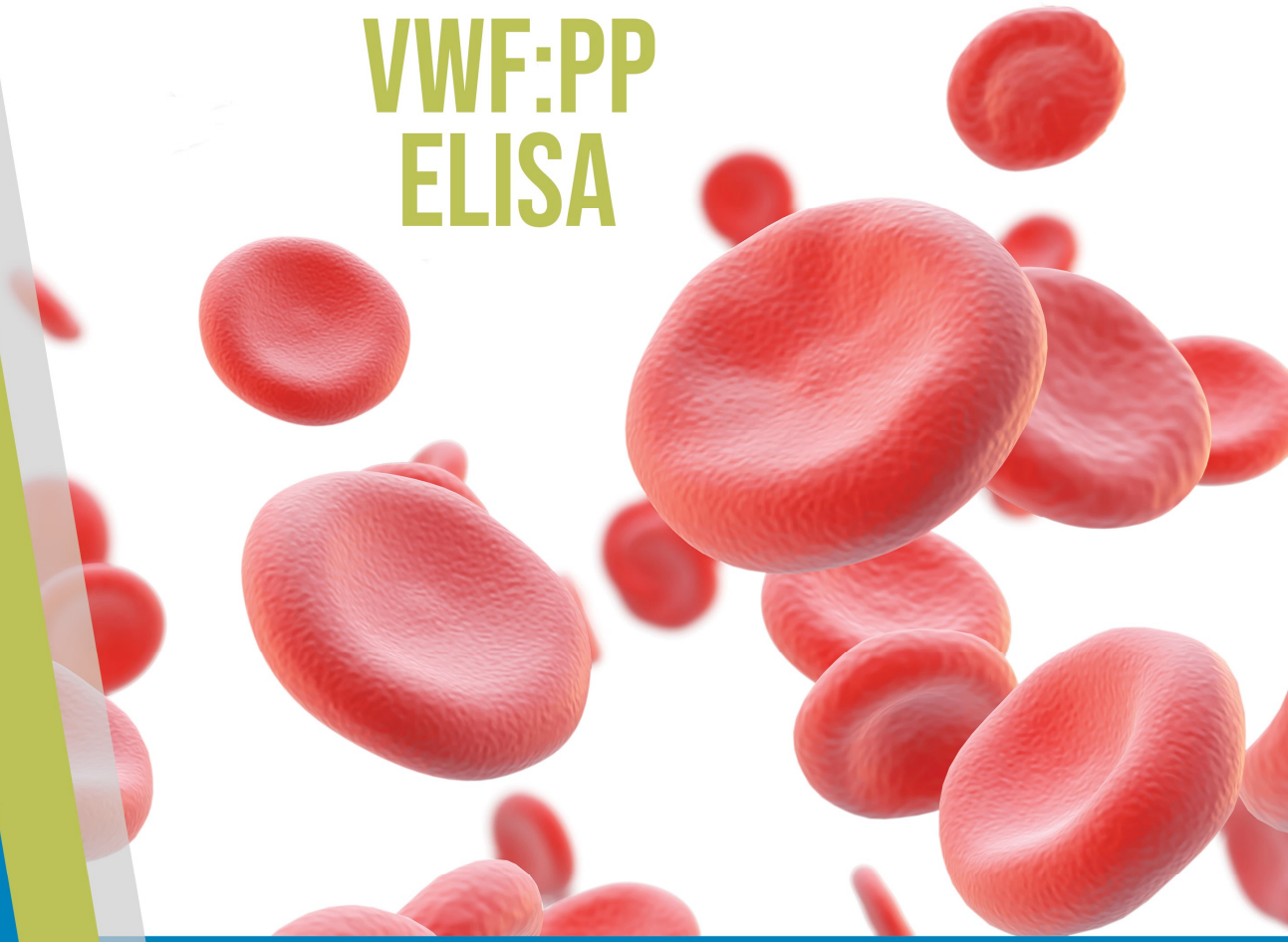
inter-array@fzmb.de | +49 3603 833141

INTER-ARRAY by fzmb GmbH
Geranienweg 7 | 99947 Bad Langensalza | Germany

WWW.INTER-ARRAY.COM

INTER ARRAY

VWF:PP ELISA



VON WILLEBRAND FACTOR PROPEPTIDE

ELISA: READY-TO-USE

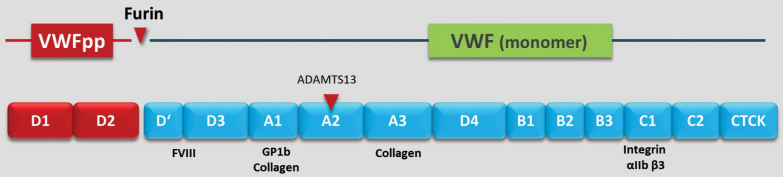
IMPORTANCE OF VWF:PP

Von Willebrand Factor (VWF) is a large multimeric plasma protein **with important functions in primary hemostasis.** VWF is synthesized in endothelial cells and megakaryocytes as pre-pro-VWF. After various posttranslational modifications and cleavage of the signal peptide, the propeptide (VWF:PP) is also cleaved off by the protease furin in the trans-Golgi-system. A non-covalent complex of VWF and VWF:PP remains stored in Weibel-Palade bodies (endothelium) or in α-granules (megakaryocytes). Activation or stimulation of these cells will release the complex. **VWF and VWF:PP dissociate and metabolize with different half lives**. While VWF has a half-life of approx. 12 hours, VWF:PP is metabolized with a half-life of only approx. 2 hours.

The molar ratio of VWF:PP to VWF can be used as an indicator for the degradation of VWF. An increased ratio of VWF:PP to VWF indicates increased clearance of VWF. These are found in various **patients with congenital VWF deficiency**, but also in acquired VWF syndrome. An accurate knowledge of the clearance of VWF may influence the choice of therapy, in particular the need to administer VWF concentrates. Increased levels of VWF:PP or an abnormal ratio between VWF:PP and VWF may also be caused by activation of the endothelium or platelets.

ACQUIRED VWF DEFICIENCY AND OTHER DISORDERS

VWF:PP is useful in acquired VWD. This may occur in patients on **extracorporeal membrane oxygenation, but also in cardiac disorders** (e.g. aortic stenosis, congenital cardiac defects, mitral valve prolapse), in **hematoproliferative diseases**, monoclonal gammopathy, myeloma other lymphoproliferative disorders. It is also important for patients with myeloproliferative disorders such as essential thrombocythemia, polycythemia vera and chronic granulocytic leukemia, **immunologic diseases, thyroid disorders, diabetes, nephropathies, disseminated intravascular coagulation, sepsis** and other diseases. The increase of VWF:PP by endothelial cell activation has been described in **COVID-19 infections**. VWF:PP levels correlated with clinical severity indices including the sequential organ failure assessment score, sepsis-induced coagulopathy score and the ratio of arterial oxygen partial pressure to fractional inspired oxygen.



FOR MANUAL PROCESSING AND AUTOMATIC SYSTEMS

The wells of the ELISA strips included in this kit are coated **with a monoclonal antibody directed against VWF:PP**. The sample is pipetted into a well, followed by a second monoclonal antibody against VWF:PP that is conjugated with an enzyme. VWF:PP binds to the antibody attached to the solid phase and is immobilized. The second antibody with the conjugated enzyme binds to the immobilized VWF:PP as well. After incubation and washing steps all unbound material is removed and **substrate added is cleaved by the bound enzyme of the conjugate and releases a dye in proportion to the bound VWF:PP**. The reaction is stopped after a set time using a stop solution and the absorbance measured. This indicates the concentration of VWF:PP. The assay is **calibrated by parallel measurement of the included calibrator** and its dilutions via a calibration curve. A quality control is possible by simultaneous analysis of the control plasma, which is included in the kit.

The VWF:PP ELISA provides a result **with few steps in 90 to 150 min with high precision.** The components in the kit for 96 tests have excellent stability. The calibration is performed against the **International Standard**. Control and calibrator are included in the kit. The VWF:PP is designed for manual processing and automated ELISA systems.

FAST ELISA: 90 MIN READY-TO-USE

References

1. Stufano F, Boscarino M, et al. Evaluation of the Utility of von Willebrand Factor Propeptide in the Differential Diagnosis of von Willebrand Disease and Acquired von Willebrand Syndrome. Semin Thromb Hemost. 2019; 45:36-42 I **2. Haberichter SL**. von Willebrand factor propeptide: biology and clinical utility. Blood 2015; 26:1753-61. I **3. Sanders** YV, Groeneveld D, et al. Von Willebrand Factor Propeptide and the phenotype classification of von Willebernd disease. Blood: 125:3008-19 I **4. O'Sullivan** JM, Ward S, et al. von Willebrand factor clearance- biological mechanismas and clinical significance. BJ Haematol 2018;183, 185-195 I **5. Eikenboom JC**, Tjenerberg P et al. Acquired von Willebrand syndrome: diagnostic problems and therapeutic options. Am J Hematol. 2007;82:55-8. I **6. Habe K**, Wada H et al. Plasma ADAMTS13, von Willebrand Factor (VWF), and VWF Propeptide Profiles in Patients With Connective Tissue Diseases and Antiphospholipid Syndrome. Clin Appl Thromb Hemost. 2017;23:622-630 I **7. Castaman G**, Hillarp A, Goodeve A. Laboratory aspects of von Willebrand disease: test repertoire and options for activity assays and genetic analysis.Haemophilia. 2014;Suppl 4:65-70. I **8. Franchini M**, Lippi G, Favaloro EJ. Advances in hematology. Etiology and diagnosis of acquired von Willebrand syndrome. Clin Adv Hematol Oncol. 2010;8:20-4. I **9. Ward SE**, Curley GF, Lavin M, et al. Irish COVID-19 Vasculopathy Study (ICVS) Investigators. Von Willebrand factor propeptide in severe coronavirus disease 2019 (COVID-19): evidence of acute and sustained

For research use only. Not for use in diagnostic procedures.