

VWF GPIbM Activity Overview

The VWF:GPIbM assay measures von Willebrand Factor platelet-binding activity.

von Willebrand disease (VWD) is a bleeding disorder characterized by either quantitative or qualitative defects of von Willebrand factor (VWF). Accurate measurement of VWF activity by assessment of its interaction with platelets is an essential component of the evaluation of a patient where there is concern for von Willebrand disease.

The VWF:GPIbM activity assay uses recombinant GPIba fragments with 2 gain-of-function variants to induce spontaneous binding of VWF to GPIba without ristocetin. The VWF:GPIbM assay eliminates the non-physiologic ristocetin reagent but does introduce a non-physiologic mutant GPIba receptor. Unlike the VWF:RCo assay, the VWF GPIbM assay does not report falsely low values of VWF activity in individuals who possess the common p.D1472H polymorphism.

Versiti has two methods of testing for VWF GPIbM Activity; the method performed is automatically selected based upon patient age at time of sample collection.

Indications for testing:

- Detect quantitative and qualitative defects of VWF
- Identify and differentiate subtypes of variant VWD
- Accurate measurement of VWF platelet binding activity in patients with identified p.P1467S and/or p.D1472H polymorphism

Assay sensitivity and limitations:

VWF is an acute phase reactant. Levels will be elevated postoperatively, with inflammation, stress, physical activity, pregnancy, estrogen therapy and hyperthyroidism. VWF levels may be artifactually reduced as a consequence of improper sample handling. VWF activity assays should be correlated with other VWF assays and with patient clinical history to support an appropriate diagnosis.

Test Methods and Limitations

	Automated (Turbidimetric)	ELISA
Test Method	Turbidimetric latex-based assay - for patients \geq 6 months old at time of collection.	ELISA - for patients < 6 months old at time of collection.
Limitations	In patients with heterophile antibodies, this assay may report a falsely high VWF:GPIbM result, and results should be correlated with other VWF assays.	The ELISA VWF:GPIbM assay will report higher levels than the VWF ristocetin cofactor assay in patients with type 2B VWD.

Assay Performance		
Lower limit of detected	4 IU/dL	2 IU/dL
Upper limit of detected	275 IU/dL	400 IU/dL
Coefficient variance	2-7%	= 15%

Specimen requirements:

1 mL citrated plasma aliquot, frozen in a plastic tube.

Minimum/Pediatric - 0.5 mL citrated plasma aliquot, frozen in a plastic tube.



SHIP

Shipping requirements:

Place the frozen specimen and the requisition into plastic bags, seal and place in an insulated container. Surround with at least 5 pounds of dry ice. Seal the insulated container, place into a sturdy styrofoam box, and tape securely. Ship the package in compliance with your overnight carrier guidelines. Address the package to:

Versiti Client Services
Hemostasis Reference Laboratory
638 N. 18th Street
Milwaukee, WI 53233
800-245-3117, ext. 6250

References

1. Favaloro EJ, Koutts J. Laboratory assays for von Willebrand factor: relative contribution to the diagnosis of von Willebrand disease. *Pathology* 1997; 29:385-91.
2. Geisen U, Zieger B, Nakamura L, Weis A, Heiz J, Michiels JJ, Heilman C. Comparison of von Willebrand factor (VWF) activity VWF: Ac with VWF ristocetin cofactor activity VWF: RCo. *Thromb res* 2014; 134: 246-50.
3. Patzke J, Budde U, Huber A, Mendez A, Muth H, Obser T, Peerschke E, Wilkens M, Schneppenheim R. Performance evaluation and multicentre study of a von Willebrand factor activity assay based on GPIIb binding in the absence of ristocetin. *Blood Coagul Fibrinolysis* 2014; 25: 860-70.
4. Flood VH, Gill JC, Moratek PA, Christopherson P, Friedman KH, Haberichter SL, Hoffman RG, Montgomery RR. Gain-of-function GPIIb binding ELISA assay for VWF activity in the Zimmerman Program for Molecular and Clinical Biology of VWD. *Blood* 2011; 117: e67-74.



ORDER

Required forms:

Please complete all pages of the [requisition form](#).

CPT Codes/Billing/Turnaround Time

Order Code: 1990

CPT Code: For recommended CPT codes, visit [versiti.org/test-catalog](https://www.versiti.org/test-catalog)

Turnaround Time: 7 days

Invoice Note: Final invoice will indicate test method code (1070 or 1090), depending on methodology performed.

For additional information related to shipping, billing or pricing, please contact, Versiti Client Services: (414) 937-6396 or 800-245-3117, Option 1, or labinfo@versiti.org.

