

In Brief

Improved and simplified diagnostic assay for von Willebrand Disease (VWD) screening. No need for ristocetin, aggregometer, or platelet reagents, reducing assay costs and false positives, while improving reproducibility.

Description

von Willebrand Disease (VWD) is the most commonly diagnosed bleeding disorder, affecting up to 1% of the general population. This improved assay for detection of VWD uses a flexible ELISA format and is amenable to FACS analysis or bead-based assays for higher throughput. The assay, called VWF:IbCo, employs mutants of the platelet protein GPIb without the need for ristocetin as an agonist for binding functionally relevant von Willebrand factor (VWF). This improved method offers several advantages over the most commonly used ristocetin cofactor assay, VWF:RCo, including reduced costs, reduced false positive rates, and simplified laboratory interpretations.

The VWF:RCo assay relies on the interaction of the antibiotic ristocetin with VWF resulting in the agglutination of platelets. It also uses a turbidometric or aggregometer readout and has been difficult to standardize. A study comparing results of the VWF:RCo method and this improved VWF:IbCo assay showed better reproducibility and lower false positive rates with VWF:IbCo, especially in individuals with VWF polymorphisms that affect the binding of ristocetin to VWF but are not associated with loss of VWF function.

Benefits

- Standard instrument platform (no specialized aggregometer needed)
- Platelets/ristocetin not used as an assay reagent, which improves cost and reproducibility
- Reduced false positives (aids diagnosis of type 2M in African Americans)
- Exclusively licensed to a global kit manufacturer

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Patent protection

Issued US patents: [8,163,496](#) [8,318,444](#) [8,865,415](#) [9,046,535](#) [9,778,272](#) [9,678,089](#) “Methods and kits for measuring von Willebrand factor”

World-wide patent and continuation strategy underway

Publications

Flood, V.H., Gill, J.C., Morateck, P.A., Christopherson, P.A., Friedman, K.D., Haberichter, S.L., Hoffmann, R.G. and Montgomery, R.R. Gain-of-function GPIb ELISA assay for VWF activity in the Zimmerman Program for the Molecular and Clinical Biology of VWD. *Blood*. 2011; 117(6), pp.e67-74. PMID: 21148813.