

ADAMTS13 Activity Testing

ADAMTS13 Activity Testing at Labcorp

Labcorp's **ADAMTS13 Activity [117913]** utilizes liquid chromatography-tandem mass spectrometry (LC-MS/MS) to measure ADAMTS13 activity in the laboratory. This is a critical component in the diagnosis and treatment algorithm of patients presenting with acute thrombotic microangiopathy.¹ ADAMTS13, also referred to as a von Willebrand factor-cleaving metalloprotease,² is an enzyme for which a deficiency results in the risk of platelet thrombi in small vessels, which subsequently may lead to the clinical manifestations of thrombotic thrombocytopenic purpura (TTP), including anemia and thrombocytopenia, with or without neurologic abnormalities and/or end organ damage.³

By utilizing proprietary LC/MS-MS technology, the ADAMTS13 Activity assay offers several advantages relative to current fluorescence-based assays, including:

- **Improved sensitivity:** Our LC-MS/MS assay has a reportable range extending down to 2% normal activity
- **Improved repeatability:** The LC-MS/MS assay could improve the management of patients with suspected TTP, particularly when monitoring ADAMTS13 activity during the course of total plasma exchange therapy
- **Reduced interference:** Fluorescence-based assays are often susceptible to interferences from hyperbilirubinemia;⁴ however, our LC-MS/MS assay has been demonstrated in our lab to be accurate in the presence of up to 20 mg/dL bilirubin
- **Reduced turnaround time (TAT):** ADAMTS13 Activity results will typically be available on the same day as long as the samples are received by 10:30 a.m. ET. Reflexed antibody testing will report at a later time, usually within four days. A shorter result delivery time for ADAMTS13 Activity has been shown to be critical in management of patients with suspected TTP by reducing unnecessary plasma exchange therapy and improving efficiency of patient care when clinically indicated.⁵ Eliminating unnecessary plasma exchange therapy not only can contribute to cost-reduction but may also prevent the potentially harmful effects associated with the therapy⁶
- **Client notification:** When ADAMTS13 Activity is less than 30%, the client is notified by phone

Labcorp's Test Offerings

Labcorp offers the following tests to support the diagnosis and management of acute thrombotic microangiopathy.

Test No.	Test Name	Use
117913	ADAMTS13 Activity	Differentiates thrombotic thrombocytopenic purpura (TTP) from a number of clinically similar conditions
117921	ADAMTS13 Activity Reflex Profile	Differentiates thrombotic thrombocytopenic purpura (TTP) from a number of clinically similar conditions; reflex to antibody assay is used to differentiate congenital from autoimmune ADAMTS13 deficiency
117915	ADAMTS13 Antibody	Differentiates congenital from autoimmune ADAMTS13 deficiency

Note: For detailed testing and specimen collection information, visit the online Test Menu at Labcorp.com. If you have questions, please contact your Labcorp account representative.

References

1. Cataland SR, Wu HM. How I treat: the clinical differentiation and initial treatment of adult patients with atypical hemolytic uremic syndrome. *Blood*. 2014 Apr 17;123(16):2478-2484.
2. Moake JL. Thrombotic Microangiopathies. *N Engl J Med*. 2002 Aug 22;347(8):589-600.
3. George JN, Nester CM. Syndromes of thrombotic microangiopathy. *N Engl J Med*. 2014 Aug 14;371(7):654-666.
4. Muia J, Gao W, Haberichter SL, et al. An optimized fluorogenic ADAMTS13 assay with increased sensitivity for the investigation of patients with thrombotic thrombocytopenic purpura. *J Thromb Haemost*. 2013 Aug;11(8):1511-1518.
5. Connell NT, Cheves T, Sweeney JD. Effect of ADAMTS13 activity turnaround time on plasma utilization for suspected thrombotic thrombocytopenic purpura. *Transfusion*. 2016 Feb;56(2):354-359.
6. Martin IW, Katus MC, Martin CLB, Szczpiorkowski ZM, Gorham JD, Dunbar NM. Rapid ADAMTS13 availability impacts treatment for microangiopathic hemolytic anemia and thrombocytopenia. *J Clin Apher*. 2016 Oct;31(5):419-422.