

Healthcare Sector Diagnostics Division

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Early detection of increased thrombosis risk: New antithrombin test by Siemens Healthcare for the European markets

Siemens Healthcare has developed Innovance Antithrombin, a new test for determining congenital and acquired antithrombin deficiency. Insufficient levels of protein in blood can lead to increased thrombophilia. Reason: Antithrombin ensures balanced blood coagulation by reducing the activity of thrombin and coagulation factor Xa which are responsible for blood coagulation. Innovance Antithrombin detects insufficient antithrombin activity, enabling the early detection of an increased risk of thrombosis in patients.

Innovance Antithrombin by Siemens Healthcare is a new chromogenic test for the automatic quantification of functionally active antithrombin in human citrated plasma. In contrast to antithrombin activity tests based on the inhibition of the coagulation factor thrombin, Innovance Antithrombin determines the activity of the antithrombin protein through the inhibition of coagulation factor Xa. This prevents distortion of the test result if a patient was given specific medication to prevent or treat thromboses, such as hirudin or other thrombin inhibitors. Innovance Antithrombin can be used with the automatic coagulation measuring devices from Siemens such as BCS and BCS XP as well as Sysmex CA-500, Sysmex CA-1500 and Sysmex CA-7000.

The new test by Siemens is also suitable for diagnosing congenital or acquired antithrombin deficiencies which are known to be linked with an increased risk of thrombosis. Antithrombin deficiencies manifest themselves in reduced activity of the antithrombin protein. Two types of congenital antithrombin deficiencies are distinguished: in case of deficiency type I, the total quantity of existing antithrombin protein is reduced, whereas in case of deficiency type II, the protein concentration is normal, but the protein is defective in respect of its inhibitor function. Acquired antithrombin deficiency exists if less antithrombin protein is produced or more is spent than usual. This may result, for example, from liver diseases, DIC (disseminated intravascular coagulation), sepsis, acute hemolytic transfusion reaction, nephrotic syndrome or major surgical

interventions. The test can also serve for monitoring the substitution therapy with antithrombin concentrates.

The test kit components of Innovance Antithrombin are ready for use and therefore especially fast and easy to use. The test is based on a chromogenic measurement principle. Citrated plasma is mixed with a surplus of coagulation factor Xa. If heparin is present, part of coagulation factor Xa is bonded and deactivated by the antithrombin present in the specimen. Surplus, uninhibited coagulation factor Xa then splits a chromogenic substrate. In this process, coloring is released, the concentration of which is detected with a photometer. The higher the concentration of the produced coloring, the higher was the quantity of uninhibited coagulation factor Xa and the lower was the concentration of functionally active antithrombin originally present in the plasma specimen.

The **Siemens Healthcare Sector** is one of the world's largest healthcare solution providers. The company defines itself as a medical solution provider with core competences and innovative strengths in diagnostic and therapeutic technologies as well as knowledge processing, including information technology and system integration. With its acquisitions in laboratory diagnostics, Siemens Healthcare is the first integrated healthcare company that combines imaging and lab diagnostics, therapy solutions and medical information technology and also supplements these with consultation and services. Siemens Healthcare provides solutions for the entire supply chain under one umbrella – from prevention, early detection and diagnosis to therapy and aftercare. In addition, Siemens Healthcare is the global brand leader for innovative hearing aids. Siemens Healthcare currently has around 49,000 employees worldwide and is represented in more than 130 countries. During fiscal 2008 (ending on September 30), Siemens Healthcare achieved a total sales volume of 11.17 billion euros and incoming orders totaling 11.78 billion euros. The Group earnings amounted to 1.23 billion euros.

For more information, go to: <http://www.siemens.com/healthcare>