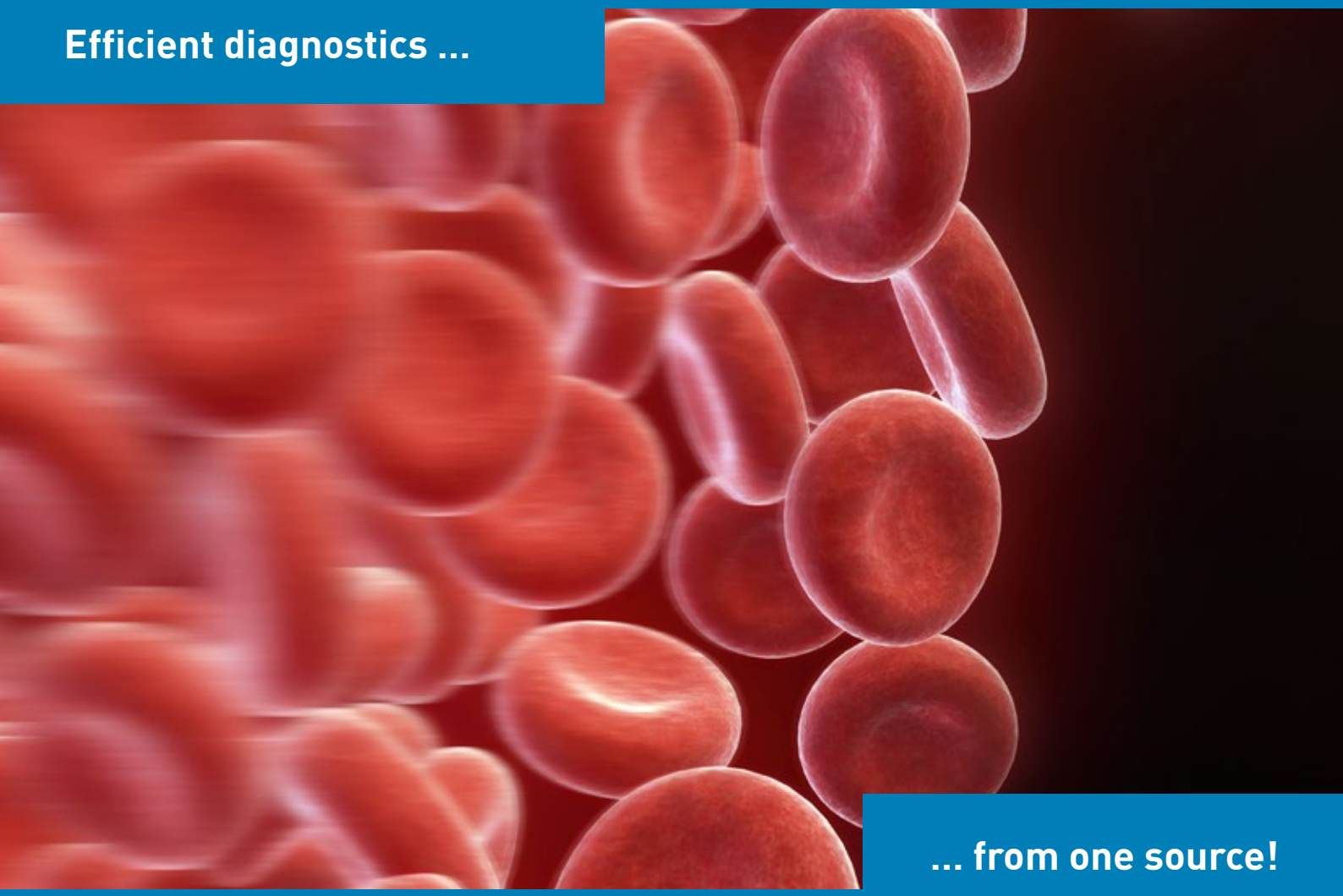
# Thrombophilia

## Efficient diagnostics ...



## ... from one source!

HAIN LIFESCIENCE

Your molecular genetic test systems for the analysis of common thrombophilia-associated mutations:

| | |
|---|---|
| **ThromboType®*plus*** | **FluoroType® Factor V** |
| **ThromboType®** | **FluoroType® Factor II** |
| **GenoType MTHFR** | **FluoroType® MTHFR C677T** |

### Your benefits of using thrombophilia diagnostics from Hain Lifescience

- **Comprehensive diagnostics:** We offer a broad range of test systems for diagnosing the individual risk of thrombophilia based on different technologies.
- **No limitation:** Molecular genetic testing of thrombophilia-relevant mutations can also be performed under anticoagulation treatment and thus at any time.
- **Efficient processing:** The possibility to combine the test systems with other products from Hain Lifescience, easily allows for simultaneous processing of different human genetic parameters.
- **Optimal service:** Intensive training and excellent service are our standard. Besides extensive product and device instructions, we also offer maintenance of our devices at attractive conditions.
- **CE-IVD certified:** No need for elaborate validation studies.

Thrombophilia

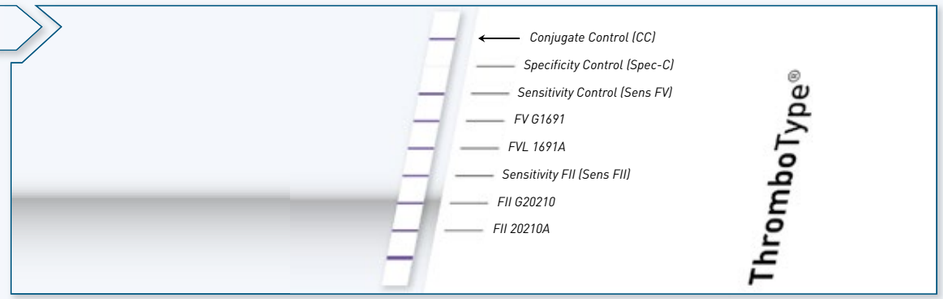
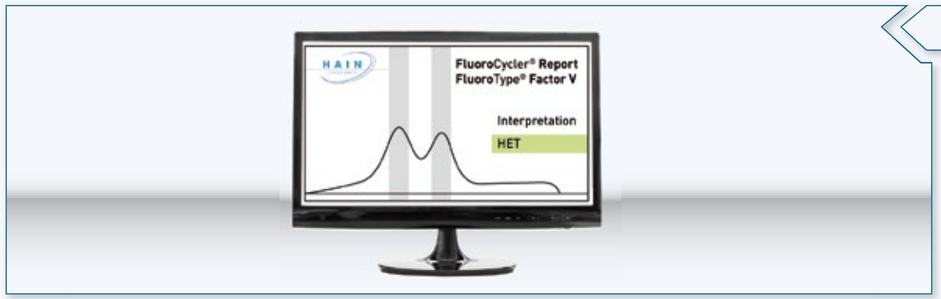
## Factor V Leiden and prothrombin mutation

Factor V Leiden and the prothrombin mutation are among the most important parameters in thrombophilia screening. In Factor V Leiden, a point mutation causes an amino acid exchange of arginine versus glutamine at position 506 in the Factor V protein, what results in an increased production of thrombin. The heterozygous Factor V Leiden mutation leads to a five- to tenfold increased risk of thrombosis, the homozygous mutation increases the risk by the factor 100.
Besides this also the prothrombin mutation is a significant genetic risk factor for the development of thrombosis. The mutation involves the noncoding regulatory area of the Factor II gene (prothrombin) and leads to an increased concentration of prothrombin in the plasma. In heterozygous carriers, the mutation is associated with a threefold increase of the thrombosis risk. Until now, the molecular genetic analysis is the only possibility to reliably detect this defect. Thrombosis patients with Factor V Leiden mutation often additionally carry the prothrombin mutation. As this combination leads to a significantly increased risk of thrombosis, it is useful to determine both parameters simultaneously.

## MTHFR polymorphisms

Homocysteine influences the arterial and venous vascular system in various ways. It acts, for instance, as cell toxin for the cells of the blood vessels. This can lead to diseases like atherosclerosis, stroke and heart attack, especially in combination with further thrombosis-associated mutations. Certain mutations within the methylenetetrahydrofolate reductase (MTHFR) gene increase the homocysteine level. There are various reports about the point mutation at position 677 within the MTHFR gene, which results in a thermolabile protein with reduced catalytic effect. This reduces the activity by as much as 60 %. Another variation at position 1298 of the MTHFR gene also leads to reduced enzymatic activity, which however, is less pronounced. Also double heterozygosity of the mutations affects the activity of MTHFR.
Testing for the presence of these two mutations enables the assessment of the genetic risk of cardiovascular diseases. Determining these parameters in combination with additional thrombosis-associated mutations allows for a substantial evaluation of the individual thrombosis risk.

## The choice is yours: Two technologies – your individual result!

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Starting material** | DNA isolated from EDTA-/citrate blood | | | | | | **Starting material** |
| **Technology** | **DNA•STRIP technology** | | | **FluoroType® technology** | | | **Technology** |
| **Display of result** |  | | |  | | | **Display of result** |
| **Test system** | **ThromboType®*plus*** | **ThromboType®** | **GenoType MTHFR** | **FluoroType® Factor V** | **FluoroType® Factor II** | **FluoroType® MTHFR C677T** | **Test system** |
| **Detection** | Factor V Leiden, prothrombin mutation, MTHFR C677T and A1298C | Factor V Leiden and prothrombin mutation | MTHFR C677T and A1298C | Factor V Leiden mutation | Prothrombin mutation | MTHFR C677T | **Detection** |


HAIN LIFESCIENCE

# Whether DNA•STRIP- or FluoroType® technology – you get everything from one source

No matter if you want to start with molecular genetic testing, expand your existing thrombophilia screening or look for an easy way to automate the processing: We have appropriate solution for all your needs! Our extensive product range for the detection of several thrombophilia associated mutations allows for comprehensive diagnostics.
For the simple and fast implementation of our thrombophilia product series in your laboratory routine, we offer user-friendly and cost-efficient technical equipment and several options for automation.

## DNA extraction – manually or automated

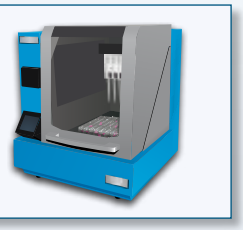
As an alternative to the manual DNA extraction we offer you the **GenoXtract® system** for a fully automated DNA isolation:

**The GenoXtract® system**

**GenoXtract® automated isolation instrument**

**GXT** Blood Extraction Kit

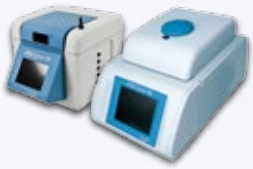
**ThromboType® / GenoType** or **FluoroType®**



## Amplification and detection – choose your test system

**Test systems based on the DNA•STRIP technology**

Amplification of up to 24 and 96 samples, respectively with the **GTQ-Cycler**



Hybridization of up to 12 and 48 samples, respectively with the **TwinCubator** or **GT-Blot 48**

**Test systems based on the FluoroType® technology**

Amplification and detection of up to 96 samples with the **FluoroCycler®**

PN12064_1114

**For further information please contact Hain Lifescience or your local distributor!**

**Hain Lifescience GmbH**

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