

## NAME OF PROJECT

### Standardization of thrombin generation assays 2.0

#### Subcommittee

Lupus Anticoagulant/Antiphospholipid Antibodies of the Scientific and Standardization Committee of the International Society on Thrombosis and Haemostasis

**Person responsible (Chair / Principal Investigator):** Katrien Devreese / Bas de Laat

#### Description Abstract

**Background:** The ideal test for diagnosing patients with the Antiphospholipid Syndrome (APS) remains a topic of discussion. The use of functional assays is gaining interest and it has been shown that by applying thrombin generation one can better predict the recurrence of thrombotic episodes. Unfortunately, the thrombin generation assay suffers from lack of standardization. Several attempts have been made in the past to standardize thrombin generation, predominantly by addressing the pre-analytical variables. Previously we have launched a questionnaire about the (pre)analytical practices used to measure thrombin generation. The data of the survey have been collected, analyzed and published by de Laat-Kremers et al. (*Romy M.W. de Laat-Kremers, Marisa Ninivaggi, Katrien M.J. Devreese, Bas de Laat. Towards standardization of thrombin generation assays: inventory of thrombin generation methods based on results of an ISTH SSC survey. J Thromb Haemost 2020; 18:1893-1899*).

We formed a working group to provide recommendations for the standardized measurement of thrombin generation, this resulted in the publication of a guidance on how to perform thrombin generation (*Marisa Ninivaggi, Romy de Laat-Kremers, Armando Tripodi, Denis Wahl, Stephane Zuily, Yesim Dargaud, Hugo ten Cate, Vera Ignjatović, Katrien M.J. Devreese, Bas de Laat. Recommendations for the Measurement of Thrombin Generation: Communication from the ISTH SSC Subcommittee on Lupus anticoagulant/Antiphospholipid Antibodies. J Thromb Haemost 2021. DOI: 10.1111/jth.15287*).

**Long term objective:** The long term objective is to try to sensitize the laboratories that measure thrombin generation into the use of a standardized protocol. This will make it easier to compare data from clinical studies in the future, as, hopefully, the interlaboratory variation will benefit from this standardization.

#### Specific aims:

The aim of our study is to compare thrombin generation with an in-house protocol compared to the measurement with our standardized protocol, performed in laboratories worldwide.

#### Design and methodology and Study population

We will distribute the following materials to various laboratories worldwide:

- A standardized protocol for thrombin generation.
- Commercial reagents needed to perform thrombin generation.

## SSC Subcommittee Project/Collaborative Project

- A normal pooled plasma.
- Four different anonymized plasma samples that differ in their coagulation potential.

The laboratories will have to measure thrombin generation according to their own in-house protocol, as well as according to our standardized protocol. Ideally, when available, laboratories could include also their own normal pooled plasma that is used in their own clinical/research studies.

### Expected timeline:

Project stage/set up	01-06-2021
Launch	01-09-2021
Duration	01-02-2022
Finalization/analysis	01-05-2022
Reporting	01-09-2022

### Expected outcomes (ie. publications):

All data will be collected from the various laboratories worldwide, analyzed and published in the Journal of Thrombosis and Haemostasis. If already available, (part of the) results will be presented during the ISTH-SSC session 2022.

### Description of project set/up and management, needed infrastructure and resources (summary):

For the aim of our study, we would like the support from the SSC for the distribution of the invitation to participate via email and website (newsletter) to various laboratories worldwide.

We would also like to request financial support from the SSC for the shipment of the reagents and samples to the participating laboratories. We will also try to obtain support via other sources (e.g. donation of reagents/plasma).

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