

## ***Assessment of DBS stability during transport and long term storage***

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### **Project overview**

Within this targeted research project, the stability of prohibited substances in dried blood spots (DBS) will be evaluated. Of particular interest is the stability of the substances in the dried state on the paper cards, and the influence of factors such as temperature, light, and humidity. Several model compounds from various classes of prohibited substances will be included in this study.

First, the impact of long-term storage will be assessed using material previously prepared with several model compounds representing most of the classes of prohibited substances, and exposed to several storage conditions such as room temperature, 4°C, -20°C, desiccant, light, darkness and storage under nitrogen atmosphere over a year. These DBS cards were subsequently stored at -20 °C, and, in this project, it is planned to prolong the stability study by adding another testing point after more than 2 years at -20°C. This will provide data for stability of these compounds after very long storage conditions.

Moreover, the stability of another set of prohibited substances, such as hypoxia-inducible factor activating agents, growth hormone and erythropoietin will be evaluated. Using an “inverse stability” protocol (according to the design of the earlier study), the stability over five months in different storage conditions will be assessed, as well as the stability during an intercontinental flight.