SAMPLE HANDLING AND SHIPPING FOR BLOOD SAMPLES

1 Purpose and Scope

This document sets forth the principal instructions for Customer to handle and ship Samples as required by the Service based on Nightingale's proprietary biomarker analysis Platform.

In case of any doubt, conflict, missing information or uncertainty of suitability or applicability of these guidelines to Customer's operating environment and Sample material, Customer is responsible to consult Nightingale and ask for Nightingale's further instructions in advance to define the Customer specific details for Sample handling and shipping to ensure the quality of the Service. Customer acknowledges that its incompliance with Nightingale's instructions may affect Nightingale's ability to provide the Service and/or the Service pricing. All exceptions to the instructions, and their possible effects to the Service, provided by Nightingale must be agreed separately.

2 Notes on Sample Collection

Many factors occurring before the collection of Samples – such as eating, physical exercise, stress, coffee, smoking, alcohol and medicines (including natural products, vitamins, nutritional supplements) – may influence the results of laboratory tests. Proper preparation of patients for blood sampling is of vital significance for the quality of the Sample and test results. It is recommended to consult Nightingale in case of untypical non-population-based studies, for example in the case of interventional studies, to test/pilot potential effects of interventions before performing extensive studies.

For the Service, standard clinical human venous fasting or non-fasting serum, or EDTA, citrate, or heparin plasma Samples are acceptable. Nightingale recommends to follow for example the WHO guidelines on drawing blood: best practices in phlebotomy on applicable parts.

The Service is compatible with all standard clinical blood samples collections. It is recommended to minimise the time of the blood as well as serum/plasma at the room temperature. The separated serum/plasma samples should be cooled down to +4°C as soon as possible. Customer shall follow the blood collection tube manufacturer's instructions for serum/plasma separation.

3 Sample Storage Requirements

The Samples shall be delivered to Nightingale within three days from sample collection, as advised by the standard practice in clinical chemistry. If the Samples are not delivered within the said time, the serum/plasma must be frozen at -20°C and, if possible, further to -80°C (or colder, e.g. liquid nitrogen) as soon as possible (preferably on the day of collection). Long-term storage (>1 month) of the Samples must always be -80°C or colder (e.g. liquid nitrogen).

4 Sample Volume and Number Requirements

The minimum biofluid volume per Sample required by the Service is defined per project basis in the Order Form. The agreed volume per Sample shall be delivered in a single tube.

The number of Samples is also defined in the Order Form.

5 Sample Container

Several types of tubes and containers are accepted. The outer diameter of a tube must be less than 13 mm. Screw cap microtubes (0.5 ml, e.g., Sarstedt 72.730.005; or 2 ml, e.g., Sarstedt 72.694.006) are the most convenient ones. Also, deep 96-well plates (e.g., Nunc U96 DeepWell PP Plate 1.3 ml Well, Nunc 260251) or 96-well format sample storage tubes with screw caps (e.g., FluidX 1.0 ml 66-32034-Z6-L) from several commercial suppliers can be used. All the sample containers within a shipment must be similar. If the Customer sends the Samples on 96-well plates or 96-well format storage tubes, locations A1 and H12 should be left open as Nightingale will use those for quality control samples. In case of any uncertainty of suitability Customer is responsible to verify suitability from Nightingale.

6 Sample Identification

Each Sample must be clearly marked with a unique identification code using a barcode or a matrix code and the Samples must be packed in an orderly fashion. The identification code is used to identify the results of the Sample. If barcode or matrix code is not available, Customer is required to consult Nightingale for further instructions.

The Sample identification codes must be sent in a table format at the same time as the Samples; one printed list shall be sent together with the Samples and the list shall also be sent to Nightingale in editable electronic format. In the table, a unique code for each Sample must be given together with the information referring to the placement of the Sample in the package. Codes and Samples must be exactly in the same order. If the identification code on the Sample (barcode or matrix code) is different than the Sample's identification code in the list, Nightingale will use the barcode or matrix code for identification.

7 Shipping Conditions

When shipping Samples that are not frozen (i.e. Samples at fridge temperature), the Samples must be kept at +4°C during the shipment. This is achieved using an insulated transportation box (e.g. a Styrofoam box) and gel or ice packs.

When shipping frozen Samples, it is crucial that the Samples are kept frozen before the shipping and also during the entire period of transportation. To ensure this, a sufficient amount of dry ice must be placed into the shipping packaging. The shipping shall include temperature monitor and dry ice replenishing service.

Customer shall confirm the Sample shipment schedule in writing with Nightingale before sending the Samples. Shipping shall not take place on a weekend or a bank holiday. To ensure appropriate shipping conditions for the Samples, Customer is at all times required to get a clearance from Nightingale before shipping.

Customer shall send a tracking code to Nightingale as soon as the Samples have been shipped.

8 Packing Instructions

Customer shall follow United Nations Recommendations on the Transport of Dangerous Goods Division 6.2 – Infectious substances (United Nations Packing Instruction 650, PI650).

Full instructions can be found for example in WHO Guidance on regulations for the Transport of Infectious Substances *http://www.who.int/ihr/publications/guidance_infectious_substances/en/* .

The main points of the instructions are:

- The packaging must be of good quality, strong enough to withstand the shocks and loadings normally encountered during transport, including trans-shipment between transport units and between transport units and warehouses as well as any removal from a pallet or overpack for subsequent manual or mechanical handling.
- The packaging must consist of three components: 1) a primary receptacle(s) (the tube, vial or other container typically made of glass or rigid plastic, including the stopper, cap or other closure elements, that is in direct contact with the specimen); 2) a leak-proof secondary packaging; and 3) a rigid outer packaging.
- Absorbent material must be placed between the primary receptacle and the secondary packaging.
- One external surface of the outer packaging clearly must show the text “BIOLOGICAL SUBSTANCE, CATEGORY B.” Adjacent to this, inside a diamond mark, must appear the text “UN 3373”.
- If shipping frozen Samples with dry ice, the outer packaging must be marked with the text “Dry Ice” or “Carbon dioxide, solid” and “UN 1845” and the net quantity, in kilograms, of dry ice. These markings must be accompanied by the Class 9 label for Miscellaneous Dangerous Goods.

9 Mailing Address and Contact Information

Nightingale will provide the project specific shipping address and contact information to Customer after the respective Order Form has been signed. Customer is advised to contact Nightingale’s named contact person with any possible questions and feedback.