

Data Collection Worksheet

Please Note: The Data Collection Worksheet (DCW) is a tool to aid investigators to integrate the collection of PhenX measures in your study. The PhenX measures that you selected and added to your Cart are presented in the DCW in alphabetical order. The DCW includes worksheets for data collection. Variables derived from the collected data are shown in the Data Dictionary (DD) with variable names and unique PhenX variable identifiers. The collection of DCWs produced by the Toolkit is not designed as a data collection instrument. Each investigator will decide how to integrate PhenX measures into data collection for their study.

Standard Half-life Factor IX Products: Individual Pharmacokinetic Study Using Chromogenic Substrate Assay

Sample Collection

The PhenX Hemophilia Inhibitors Working Group (WG) recommends that investigators follow the sample collection procedures outlined in Lippi et al. (2012) to ensure quality specimens for coagulation testing. These recommendations include basic criteria for venipuncture (e.g., proper patient identification, use of correct techniques, appropriate devices and needles) as well as additional guidance for critical parameters which can affect the outcome of clot-based tests. These critical parameters include prevention of prolonged venous stasis, collection of nonhemolyzed samples, order of blood draw, and appropriate filling and mixing of collection tubes.

Additionally, the WG highlights that blood should be collected by direct venipuncture into 3.2% sodium citrate tubes and filled within 11% of fill line. A second tube should be collected. A discard tube should be drawn if using a winged butterfly collection system.

Sample Processing

The WG recommends that investigators follow the sample collection procedures outlined in Adcock Funk et al. (2012). The procedures include that:

- unprocessed or processed sodium citrate samples remain capped and at room temperature until testing,
- samples should not be refrigerated or stored on ice or in an ice bath,
- samples should be transported vertically, and
- samples should not be agitated during transportation to avoid remixing of components.

Additionally, samples can be transported and stored as:

- unprocessed sodium citrate whole blood samples,
- whole blood samples centrifuged and maintained in sodium citrate tubes, or
- plasma processed by centrifugation and aliquoting into a second tube.

Ideally, whole blood samples should be processed to platelet poor plasma (PPP) within 1 hour of collection and assayed within 4 hours of collection.

If centrifuging samples, the centrifuge should be validated so that process results in less than 10,000 platelets/microliter. Centrifuged samples should be frozen immediately and can be stored at -20° C for 2 weeks. Samples should be transferred to \leq -70° C for longer storage, including shipment.

Standard Half-life Factor IX Products: Chromogenic Substrate Assay

The WG notes that there are a number of different assays and instruments that are appropriate to perform the chromogenic substrate assay. Once an assay is chosen for a particular study, the WG recommends that no changes in the protocol be made over the course of the study. Because results can vary with the instrumentation and reagents, the WG recommends that the investigator record the make and manufacturer of equipment, the repeatability and coefficients of variation for the assay, and the reagents used.

Standard Half-life Factor IX Products: Individual Pharmacokinetic Study

The WG recommends that the pharmacokinetic evaluations using the chromogenic substrate assay be performed according to the parameters outlined by Subcommittee on Factor VIII and Factor IX of the Scientific and Standardization Committee of the International Society on Thrombosis and Haemostasis (Lee et al., 2001). This includes infusing a 100% correction dose of Factor IX concentrate after a treatment-free washout period lasting longer than 5 half-lives. Factor IX activity is then tested at 10 timepoints:

- before infusion (baseline),
- 10-15 minutes after infusion,
- 30 minutes after infusion,
- 1 hour after infusion,
- 3 hours after infusion,
- 6 hours after infusion,
- 9 hours after infusion,
- 24 hours after infusion,
- 48 hours after infusion, and
- 50 hours after infusion.

A sample taken at 72 hours after infusion is optional if the patient received \geq 75 u/kg of standard half-life Factor IX product.

Standard Half-life Factor IX Products: Interpretation of Individual Pharmacokinetic Study Results

The half-life of Factor IX therapies is highly variable (see [Iorio, 2017]) and the level at which an inhibitor is suggested has not been established.

Protocol source: <https://www.phenxtoolkit.org/protocols/view/910903>