

Revision changes

20-02-2020: delivery/aanlevering buizen is gewijzigd

06-07-2023: remstanden van het centrifuge protocol zijn aangepast

1. Goal

To describe how EDTA plasma for cell-free DNA must be prepared and stored for Radboud Biobank (RB) purposes, so that:

1. Interested parties including potential users know how the biomaterial has been handled.
2. The laboratory can assess whether they can process the biomaterial as described under paragraph 2 "Preparation".
3. The laboratory knows the requirements for the collection, processing and storage of the biomaterial to enable registration of deviations.
4. The collectors know the requirements for collection and transport of the biomaterial to ensure correct delivery.
5. The RB is able to attach this procedure to the biomaterial in storage to determine the fitness for purpose.

1.1 Scope of application

This procedure is applicable to all employees concerned at the RB, the collectors and the Radboud Laboratory for Diagnostics.

2. Protocol EDTA plasma for cell-free DNA

Collection

Delivery	In three collection tubes. Do not send the tubes with the pneumatic tube system but send them by intern transport.
Type of tube	Standard 10 ml tube EDTA K2E, without gel, without protease inhibitors. BD tube 367525 or equivalent.
Temperature	Keep tubes at room temperature until prepared for storage.

Preparation

Time until freezing	Prepare and freeze the collected blood as soon as possible. Aim: within 2 hours after collection. Maximum: within 4 hours.
Centrifuge	g-force: 1600g. Time: 10 minutes. Temperature: room temperature. Brake: braking position 2.
Processing	Transfer the supernatant of each tube to a 5 ml polypropylene centrifugation tube (Eppendorf No. 0030119.401 or equivalent).
Centrifuge	5 ml polypropylene centrifugation tubes. g-force: 16.000g. Time: 10 minutes. Temperature: cooled 4 °C. Brake: braking position 5.
Processing	Aliquotation of supernatant.

Storage

Register	Register the 5ml tubes in the Biobank Information Management System (BIMS) and attach a cryovial label.
Aliquotation	Transfer the supernatant of each centrifugation tube to a 5 ml polypropylene storage tube.
Type of tube	5 ml polypropylene tube with external thread and screw cap. (Fisherbrand No. 10-500-27 or equivalent).
Temperature	-80°C.

Miscellaneous

Deviations Note all deviations from this procedure in the (BIMS).

3. Quality assurance

Review takes place via i) an internal audit (available on request at radboudbiobank@radboudumc.nl) and ii) 2-monthly performance reviews of deviations registered in the biobank management system (available on request at radboudbiobank@radboudumc.nl)

3.1 Performance indicator

95% of the relevant samples have been prepared and stored within the parameters of this procedure.

4. Accountability

-

4.1 Limitations

-

5. Comments

- It is the responsibility of the collectors to document in the clinical data if the blood has been collected under fasting or non-fasting conditions.
- Thaw cryogenic tubes at appropriate temperature as specified in your protocol.
 Note: If cryoprecipitates form in the plasma, vortex the tube for 30 seconds after thawing. Do not centrifuge the plasma.

5. Relevant documents

Qdocs, literature, legislation and codes of conduct, website etc.

link	Title
Qdoc 045014	Radboud Biobank voorschrift RLD
Qdoc 078088	Monstermanagement RLD t.b.v. Radboud Biobank
Qdoc 084860	DVO RLD - Biobank
ISO 20186-3	Molecular in vitro diagnostic examinations – Specifications or pre-examination processes for venous whole blood – part 3: Isolated circulating cell free DNA form plasma.
Pubmed	Article: Effect of pneumatic Tube System Transport on Cell-Free DNA.
Qdoc 015297	Bloedafname RLD: veneus en capillair