

Jul 27, 2023

Plasma procurement and processing

DOI

<https://dx.doi.org/10.17504/protocols.io.14egn3z6ml5d/v1>

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Protocol Citation: hannah.anvari , asma.giornazi , shriya.shah , maryellen.pavone , francesca.e.duncan francesca.duncan 2023. Plasma procurement and processing . protocols.io <https://dx.doi.org/10.17504/protocols.io.14egn3z6ml5d/v1>

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Protocol status: Working

We use this protocol and it's working

Created: July 11, 2023



Last Modified: July 27, 2023

Protocol Integer ID: 84851

Keywords: human, blood, plasma, storage of human plasma, plasma procurement, human plasma, follicular fluid, processing purpose, protocol, protocol detail, tissue, storage, use in the collection, processing

Funders Acknowledgements:

SenNet

Grant ID: U54AG075932

Abstract

Purpose: This protocol is intended for use in the collection and storage of human plasma in a research setting. The protocol details the collection, processing, and long-term storage for downstream analysis alongside other tissues or samples of interest (i.e. follicular fluid, ovary).

Guidelines

Researchers will adhere to all safety and training protocols required by the institution (Northwestern Medicine/Northwestern

University) including but not limited to:

1. Biosafety Certification
2. Bloodborne Pathogens Certification
3. Collaborative Institutional Training Initiative (CITI program) Certification

Materials

1. BD Vacutainer Plastic Blood Collection Tubes with K₂EDTA: Tube Stopper (Fisher Scientific, BD 36866 or equivalent).
2. Corning 2 mL Internal Threaded Polypropylene Cryogenic Vial, Self-Standing with Round Bottom (Fisher Scientific, 03-374-059 or equivalents).



Safety warnings

- ⚠ Researchers will wear personal protective equipment when working with human specimens, including gloves, masks, and lab coats.

Ethics statement

Human blood procurement and processing will adhere to the approved IRB protocol approved through NU (NU12G09) for collection of biofluids associated with study participants through Northwestern Medicine.

- 1 Blood samples in BD Vacutainer™ Plastic Blood Collection Tubes with K2EDTA with Tube Stopper (Fisher Scientific, 23-021-013) are collected in pre-op from nurses. Samples are kept upright and placed on ice immediately following collection. Research coordinator will bring both specimens to the lab on ice (2-4 °C). Samples should be transported in blue, labeled biohazard cooler bag (Fig. 1A, B).



Fig. 1. Typical blood/plasma collection. Whole blood samples are collected from clinical staff and then passed to research coordinator. Samples are brought to the lab on ice and kept at 2-4°C until processed (A, B).

- 2 Blood is centrifuged at 300g for 10min at room temperature (RT). Images of blood samples before and after centrifugation are seen below (Fig. 2A, B). Plasma (translucent top layer) is then aliquoted into 2 mL cryovial tubes (Fig. 2C) and stored at -80°C.

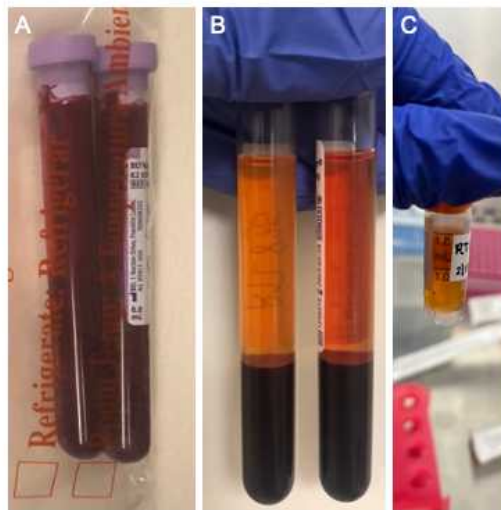


Fig. 2. Whole blood is centrifuged at 300g for 10 minutes (A). Once the plasma is clearly separated, the aspirate is collected and aliquoted into 2 mL cryovials (B, C). Samples are kept cold throughout processing (2-4°C) and then stored at -80°C.