



BC Generations Project SST Processing Protocol

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1.0 PURPOSE

The BC Generations project is collecting participant blood in Becton Dickenson SST vacutainer for the purpose of obtaining a serum sample. Serum samples will be used for measuring a variety of biomarkers (e.g. cytokines, proteins). As we can't predict all biomarkers that will be tested in the next 25 years optimal processing, storing and documenting the sample history is of highest importance. These samples are collected by a certified phlebotomist either during the participant's visit to at an assessment centre or at a community laboratory.

2.0 MATERIALS, EQUIPMENT AND FORMS

Officially received SST samples	Biological Safety Cabinet Class II type A2
Lab gown & gloves (nitrile)	Ice bucket
P1000 pipette & filtered tips	Red capped Nunc 1.8 mL cryovials
Labelled Storage boxes with 9x9 inserts	Cryovial racks
Biohazard waste bag	Dry ice

CoolBox™	70% Ethanol
Vacutainer racks	Computer with access to Laboratory Information Management System

3.0 SST SAMPLE PROCESSING

- 3.1 You will receive two (years 2009-2013) or three (years 2013-present) SST (5.0 mL) Vacutainers per subject. These samples have been centrifuged (Appendix A) on-site of the collection location after the blood was allowed to clot for 30 - 60 minutes at room temperature. Proceed using SST tubes that have been officially received. Spun-SST tubes will be found in the 4°C refrigerator.
- 3.2 Process samples in batches of 20 participants or less, maintaining the order in which they were collected and starting with the oldest. Collection time can be obtained from the Lab requisition that accompanies the samples. Sample processing and storage will be document using the Laboratory Information Management System (LIMS).
- 3.3 Document the following attributes in LIMS for each SST serum sample: presence of hemolysis, presence of lipidemia, presence of post-centrifugation fibrin clot(s), processing note.
- 3.4 Label each red capped cryovial with each own unique label generated by LIMS.
- 3.5 Aliquot samples in the biological safety cabinet (BSC) (Class II type A2).
- 3.6 Keep the SST tubes cool while processing.
- 3.7 Aliquot each SST tube into its 3 or 2 corresponding cryovials containing red caps.
 - 3.7.1 Uncap the cryovials that you will be pipetting into.

- 3.7.2 Using a P1000 pipette, transfer 1.0ml (1000µl x 1) of serum to the first 2 labelled cryovials for that tube. Pipette the remaining volume (<0.3 mL) to either the 3rd cryovial (if using) or to the 2nd cryovial. *Double check to make sure the correct SST tube is being aliquot into the correct cryovials.*
- 3.7.3 Recap the cryovials and place in the 4°C Coolbox™.
- 3.8 Discard the SST tube (now only containing the RBC layer and plug) into the red biohazard bag.
- 3.9 Proceed with steps 3.2 – 3.8 until all the SST vacutainer tubes have been processed. Document processing in LIMS.
- 3.10 Proceed with Section 4.0: Filling & Inventory the Storage Box
- 3.11 Clean up the biological safety cabinet.

4.0 FILLING AND INVENTORY THE STORAGE BOX

- 4.1 All samples will be kept on dry ice when outside the freezer.
- 4.2 Select either the last partially filled storage box or a new storage box and place on dry ice.
- 4.3 Physically transfer cryovials from the CoolBox™ to the storage box. Samples will be transferred to 3 storage boxes to be stored in 3 separate freezers. Maintain the same sample order.
- 4.4 Inventory the samples in LIMS.
- 4.5 When the storage box is full or if you are done processing the batch, transfer these samples to the -80°C freezer.
- 4.6** If and when samples are relocated to another freezer, including -190°C vapor phase freezer, document the move in LIMS.

APPENDIX A: SST CENTRIFUGATION CONDITIONS

Community Laboratory (CL)	Centrifugation Speed	Time (minutes)	Temperature	Break-On (Yes/No, Unknown)
Assessment Centre	1300g	10	Room temp	Yes
CL-A	1300g	10	Room temp	Unknown
CL-B	2200g	10	Room temp	No
CL-C	1800g	10	Room temp	Yes