

Accelerated Cure Project
MS Sample & Data Repository – First Visit and Longitudinal Sample Collection – Pediatric Kit
Final 11/18/08

Priority	Type of tube/sample	Processing/use	Number of experiments enabled	Number of tubes	Volume of blood collected (ml)
1	CPT for cell line transformation to provide DNA, RNA	Site stores and ships to SeraCare at ambient temperature	Indefinite number after successful transformation	1	8
2	CPT for cells for immunological experiments	Site stores and ships to SeraCare at ambient temperature		2	16
3	Serum SST (red/gray speckled or tiger top)	Site centrifuges, aliquots serum into 0.5 or 1 ml tubes, freezes, ships frozen to SeraCare	6-8 per tube collected (3-4 ml of serum per tube, 0.5 aliquot distributed per experiment)	2	12
4	EDTA (lavender top) for plasma and DNA extraction	Site refrigerates and sends to SeraCare with cold pack same day or next day	DNA -- 25 or more (1-5 ug distributed per experiment)	1	6
5	Paxgene tubes for RNA	Site refrigerates and sends to SeraCare with cold pack same day or next day	Depends on investigation being performed (each tube provides 5 to 7 ug of RNA and is aliquotted into 2 5-ml samples)	3	7.5
6	CPT or ACD for fresh cells for immunological experiments, etc.	Site stores and ships to researcher directly – NOTE this tube will not be collected as part of usual kit but instead as needed to meet approved requests for live cells	Depends on investigation being performed (but each tube will be sent to only one scientist)	TBD as part of special kits to be approved on case-by-case basis	TBD
	Total			9	49.5

Notes on sample/tube types

Without anticoagulant:

Serum (red top or SST speckled/tiger top): Does not contain anticoagulant. May contain factors such as silica particles to accelerate clotting. When centrifuged, serum is separated from fibrin/cells. The SST (serum separator tube) is like the red top tube, but contains a polymer barrier that physically separates the two layers when centrifuged.

Uses: Antibody detection (10 to 500 ug per test), virology (e.g., viral DNA), proteomics, other.

Yields approximately 3-4 ml serum per 10-ml tube.

With anticoagulant:

EDTA (lavender top): Contains EDTA as an anticoagulant. Centrifuging separates whole blood into plasma, buffy coat (white blood cells), and red blood cells.

Uses: Hematology, DNA for genotyping, viral RNA, viral culture, antibody detection, RNA, proteomics.

Yields 250 ug of buffy coat DNA per 10-ml tube. DNA is often distributed in 1-10 ug aliquots.

CPT (green top): Contains a separation medium that separates blood into its components and preserves the layers during transport via a barrier gel. Is easier than traditional separation techniques using Ficoll, but yields may be lower.

Uses: Cell line immortalization, cell isolation for immune assays, virology.

Whole blood/plasma (green top): Contain sodium heparin or lithium heparin to inhibit clotting. Produces a whole blood/plasma sample. When centrifuged, plasma separates from cells. PST (green/gray speckled top) is like the green top tube, but contains a polymer barrier that physically separates the two layers when centrifuged.

Uses: Hematology, virology, chemistry tests.

ACD (yellow top): Contains acid-citrate-dextrose as the anticoagulant. Used to collect whole blood for special tests such as lymphocyte surface markers, viral or human DNA analysis, viral RNA, viral antigens, HLA typing.

SPS (yellow top, not the same as ACD): Contains sodium polyanetholsulfonate as an anticoagulant. SPS inactivates antimicrobial cationic compounds. Used for blood culture specimen collection in microbiology.

Other options:

Citrate (ESR) (black top): Used for sed rate tests (ESR).

PaxGene tubes: Used for gene expression tests.

Trace element tubes (royal blue): Used for detecting elements such as arsenic, copper, iron, etc. Needles etc. must also be free of whatever element is being investigated. May or may not contain the anticoagulant EDTA.

Lead testing tubes (tan)