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Quick Reference Guide

General Lab: Blood Drawing Guide to Volumes and Grouping of Tests

This reference guide is intended to be used for short term help. The most current version will be found through Planet TCH Intranet.

Refer to the Lab Test Dictionary on Planet TCH for specific drawing instructions.

General Lab: Blood Drawing Guide to Volumes and Grouping of Tests

Chemistry Tests

Panel	Components	Recommended Volume (whole blood)	Min Volume (whole blood)
Lytes	Na, K, Cl, BIC	1.0mL	0.5mL
BMP Basic Metabolic Panel	Lytes, Glu, Bun, Cre, Ca	0.9mL	0.7mL
CMP Complete Metabolic Panel	BMP, TP, ALB, TBILI, ALK, AST, ALT	1.5mL	1.0mL
HFP Hepatic function Panel	TP, ALB, TBILI, DBILI, INDIRECT BILI ALK, AST, ALT	1.0mL	0.7mL
RFP Renal function Panel	BMP, PHOS, ALB	1.5mL	0.8mL
Thyroid Group	TSH, T4	1.5mL	0.8mL
Lipid Panel	CHOL, TRIG, HDL	0.9mL	0.7mL
Lipid Panel plus LDL	CHOL, TRIG, HDL, LDL	0.9mL	0.7mL
Gases listed below are 0.3 plus the listed volumes above			
ABG	pH, pCO ₂ , pO ₂ , HCO ₂ , TCO ₂ , Base Excess, O ₂ SAT,	1.0mL	0.3 – Hep. syringe
ABG plus Lytes		1.5mL	0.8 – Hep. Syringe
ABG plus BMP		1.5mL	1.0 – Hep. Syringe

- All volumes are for lithium heparin – Green BD, Green Vacutainer or heparin syringe.
- Assumed that HCT is normal or low. If the HCT is high then add 0.2 to all volumes.
- General rule: Any two panels require 1.8mL
- For any panel plus tests use this general rule: Panel volume requirement plus 0.1mL for every 3 tests in the table below. Example: BMP plus PHOS, MG and GENT – then draw 0.8mL

PHOS	MG	URIC	GGT	AMY	ALB	ALK	CK	TBILI	DBILI	CRP
BUN	CRE	CA	TP	LIPASE	GENT	CARB	TRIG	PHENYOIN	PHENOBARB	T4
AST	ALT	VALP	THEO	TOBR	CHOL					

Additional info:

- **Vanco – 0.4ml Lavender top tube**
- **Lithium – 0.4ml Red, Gold, or Lavender top tube**
- **FSH and LH - Red or Gold top tube**
- **FT4 – Must be Red or Gold top tube**
- **TSH & T4 – May be Red, Gold, or Green top tube**
- **Iron Panel – Red or Gold top tube**
- **Prealbumin – Gold or Green top tube**
- **Ammonia – Green or Lavender top tube**

Hematology Tests

- All volumes are whole blood
- All samples must be well mixed and free of clots
- All samples can be shared with Blood Bank **prior to performing any testing and all minimum volumes are still met.**

Test/Panel	Tube Type	Recommended Volume (whole blood)	Minimum Volume (whole blood)
CBC	Lavender Top	Greater than 1.0mL in a 3.0mL Vacutainer tube	0.4mL
Retic	Lavender Top		0.4mL
ESR	Lavender Top		0.4mL
CBC, Retic	Lavender Top		0.4mL
CBC, ESR	Lavender Top		0.4mL

Coagulation Tests

- All volumes are based on a normal or low HCT. If HCT > 55%, request special tube for all coagulation testing.
- All samples must be mixed well and free of heparin and clots.
- General Rule for special coagulation tests (Factors 5, 7, 8, 9, AT, Protein C/S, vW Ag, dRVVT, Plasminogen): for every 2 tests, draw one 3ml Blue Top Tube.

Test/Panel	Tube Type	Minimum Volume (whole blood)
PT/INR	Blue Top	<ul style="list-style-type: none">• 1 full 2mL or• 1 full special microtainer requested from lab
PT/INR, PTT	Blue Top	2mL – 1 full blue top
PT/INR, PTT, FIB	Blue Top	2mL – 1 full blue top
DIC – PT, PTT, FIB, D-Dimer, Platelet Count	Blue Top Lavender Top	2mL – 1 full blue top 0.4mL – Lavender
Heparin Assay	Blue Top	<ul style="list-style-type: none">• 1 full 2mL or• 1 full special microtainer requested from lab
DIC, Heparin Assay	Blue Top Lavender Top	3mL – 1 full blue top 0.4mL – Lavender
PFA – Platelet Function Assay	Blue Top Lavender Top	3mL – 1 full blue top 0.4mL Lavender
PT/INR, PTT, PFA	Blue Top Lavender Top	3mL – 2 full blue tops 0.4mL Lavender

Flow Cytometry Tests

Panel	Components	Tube Type	Recommended Volume (whole blood)	Minimum Volume (whole blood)
TBNK	CD3,CD4,CD8,CD9,CD56 (all t-cells, b-cells, and NK-cells)	Green Top <u>without gel separator</u>	1.0mL	0.5ml
T-cell subsets	CD3,CD4,CD8 (t-cells only)	Green Top <u>without gel separator</u>	1.0mL	0.5ml
CD20	CD20	Green Top <u>without gel separator</u>	1.0mL	0.5ml
CD20 + TBNK	Combined testing can be from one tube	Green Top <u>without gel separator</u>	2.0mL	1.0ml
EDTA (Lavender Top) can be used for any of the above tests, but Flow Cytometry testing must be performed within 24 hours of collection				
CBC + any of the above panels	The CBC and Flow Cytometry testing can be performed on the same sample.	Lavender Top Only	2.0mL	0.4ml + 0.5ml for each Flow test ordered

Blood Bank Tests

All testing to be formed from same collection, cannot combine specimen with different draw times.

Test	Tube Type	Recommended Volume (whole blood)	Minimum Volume (whole blood)
Type and Hold	Lavender Top	3-5ml	2ml
Type and Screen	Lavender Top	3-5ml	2ml
Type and Cross	Lavender Top	3-5ml	2ml
Newborn Work-up	Lavender Top	3-5ml	1.5ml
Any patient with Hematocrit greater than 55% requiring above testing		Double the above volumes	
ABORh	Lavender Top	1ml	1ml
Direct Coombs	Lavender Top	1ml	1ml
Direct and Indirect Coombs	Lavender Top	3-5ml	2ml
ABORh and Direct Coombs	Lavender Top	1ml	1ml

- All the above testing can be performed on a Red Top Tube (no gel). Can delay testing up to 45 additional minutes.
- No testing performed on any tube color other than Lavender and Red.
- All samples can be shared with Hematology **prior to performing any testing and all minimum volumes are still met.**

Molecular Diagnostics

- All specimen for Molecular, testing need to be drawn separately from all other general lab tests such as specimens for Hematology, Chemistry, and Blood Bank.

Test	Tube Type	Recommended Volume (whole blood)	Minimum Volume (whole blood)
CMV PCR Quant	Lavender Top	1ml	0.5ml
EBV PCR Quant	Lavender Top	1ml	0.5ml
BCR PCR Quant	Lavender Top	6ml	3.0ml
Factor V Leiden	Lavender Top	1ml	0.5ml
PT 20210	Lavender Top	1ml	0.5ml
MTHFR	Lavender Top	1ml	0.5ml