

NewYork-Presbyterian Hospitals

Department of Pathology & Laboratory Medicine | Laboratory Reference

Vacutainer Order of Draw

Venous blood sampling: order of draw and specimen handling

ORDER OF DRAW	TUBE	TUBE TYPE	INVERSIONS	CLOTTING TIME	CENTRIFUGATION CONDITIONS
START Discard tube OR blood culture		EST or other suitable tube* (Discard tube – not mixed)	Discard tube is not required before blood collection for blood culture bottles.*		
		Aerobic blood culture bottle	Blood culture bottles are drawn at this position when ordered (in place of a discard tube).		
		Anaerobic blood culture bottle			
1 Coagulation tubes		Sodium citrate, plastic	3-4	n/a	2000-2500 g (RCF) for 10-15 min. at 18-25 °C
2 Serum tubes, with or without separator		Serum with clot activator (silica particles)	5-6	60 min.	≤1300 g (RCF) for 10 min. at 18-25 °C
		Serum thrombin	5-6	5 min.	≤1300 g (RCF) for 10 min. at 18-25 °C
		BD RST (serum thrombin with gel)	5-6	5 min.	1500-2000 g (RCF) for 10 min, 2000 g (RCF) for 4 min, or 4000 g (RCF) for 3 min at 23-27 °C
		BD SST™ II Advance (serum with gel)	6	30 min.	1300-2000 g (RCF) for 10 min. at 18-25 °C
3 Heparin tubes, with or without separator		BD Barricor™	8	n/a	4000 x g (RCF) for 3 min. or 3000 x g (RCF) for 5 min. at 18–25 °C, or alternative centrifugation conditions ³
		Lithium & sodium heparin	8-10	n/a	≤1300 g (RCF) for 10 min. at 18-25 °C
		BD PST™ II (plasma with gel)	8-10	n/a	1300-2000 g (RCF) for 10 min. at 18-25 °C
4 EDTA tubes, with or without separator		EDTA	8-10	n/a	n/a
		PAXgene® Blood DNA Tube	8-10	n/a	n/a
		Blood banking	8-10	n/a	≤1300 g (RCF) for 10 min. at 18-25 °C
		BD PPT™ EDTA with gel	8-10	n/a	1100 g (RCF) for 10 min. at 18-25 °C
5 Glucose		Fluoride	8-10	n/a	≤1300 g (RCF) for 10 min. at 18-25 °C
6 Tubes with other additives		ACD	8-10	n/a	n/a
		Trace elements with EDTA	8-10	n/a	≤1300 g (RCF) for 10 min. at 18-25 °C
		Trace elements serum with clot activator (silica particles)	5-6	60 min.	1300 g (RCF) for 10 min. at 18-25 °C
		BD CPT™ Sodium Citrate or Sodium Heparin	8-10	n/a	Citrate tube 1500-1800 g (RCF) for 20 min. at 18-25 °C Heparin tube 1500-1800 g (RCF) for 15 min. at 18-25 °C
		BD™ P800	8-10	n/a	1100-1300 g (RCF) for 20 min. at 18-25 °C (8.5 mL tube) 1100-1300 g (RCF) for 10 min. at 18-25 °C (2 mL tube)
		BD™ P100	8-10	n/a	2500 g (RCF) for 20 min. at 18-25 °C (8.5 mL tube) 1000-3000 g (RCF) for 10 min. at 18-25 °C (2 mL tube)
		PAXgene® Blood ccfDNA Tube	8	n/a	1600-3000 g (RCF) for 15 min. at 15-25 °C
		PAXgene® Blood RNA Tube	8-10	n/a	n/a

IMPORTANT MIXING GUIDELINES

All BD Vacutainer® tubes, except discard tubes, require immediate mixing following collection. Insufficient mixing can result in inaccurate test results and the need to re-draw. Correct mixing technique is to gently invert (180° and back) each tube the recommended number of times shown in the Recommended Inversions column.

*Discard tube is not required before blood collection for anaerobic and aerobic blood culture bottles. n/a = not applicable

1. Sequence for sample taking according to Clinical and Laboratory Standards Institute (CLSI), *Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture*; Approved Standard – Sixth Edition, CLSI document H3-A6, 2007. 2. Simundic AM et al. Joint EFLM-COLABIOCLI Recommendation for venous blood sampling. *Clin Chem Lab Med*. 2018;56(12):2015-2038. doi: 10.1515/ccm-2018-0602. 3. BD Vacutainer® Barricor™ blood collection tube Instructions for Use, www.bd.com/ifu.

CE0123 applies to BD Vacutainer® CPT™ Cell Preparation Tubes, BD Vacutainer® EDTA Aprotinin Blood Collection Tubes, PAXgene® Blood ccfDNA Tube and PAXgene® Blood RNA Tube. CE applies to all other BD Vacutainer® Blood Collection Tubes and PAXgene® Blood DNA Tube. CE2797 applies to BD Bactec™ Blood Culture Bottles.

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