

Analytes	Unspun Blood Room Temperature 20-25°C	Post-Processing			Special Handling/Notes	Source/Remarks / Comments
		20-25°C	2-8°C	-20°C		
Alpha 1-fetoprotein (AFP)	1 d	5 d	14 d	3 m		Roche Application Sheet
Alpha 1-Antitrypsin (A1AT)	7 d	7 d	3 m	3 m		Roche Application Sheet
Acetaminophen	1 d	1 d	7 d	6 m		Chronolab/WHO
Albumin	6 d	10 w	5 m	4 m		Chronolab/WHO
Alkaline Phosphatase	4 d	7 d	7 d	2 m		Chronolab/WHO
ALT	3 d	3 d	7 d	7 d		Chronolab/WHO
Ammonia	15 min in EDTA	15 min	2 h	3 w	30 min unspun on ice; freeze sample if not analyzed immediately	Chronolab/WHO
Amylase	4 d	7 d	7 d	1 y		Chronolab/WHO
ANA	2 h	1 d	21 d	1 m		WHO, Mayo
AST	1 d	1 d	7 d	3 m		Roche Application Sheet 20-25°C Chronolab/WHO 2-8°C and -20°C
Beta-2- Microglobulin (B2MG)	1 d	3 d	3 d	6 m		Roche Application Sheet
Beta-2-Glycoprotein IgG/IgM	2 h	2 d	21 d	21 d		Mayo
Bicarbonate (CO <sub>2</sub> )	6 h, if unopened	1 d*	7 d*	14 d*	*If tube has never been uncapped	The Effect of Serum-Clot Contact Time on Clinical Chemistry Laboratory Results-unspun at RT Chronolab/WHO 20-25°, 2-8°C and -20°C
Bilirubin, direct	4 h (unprotected or protected from light)	1 d*	7 d*	6 m*	Darkness required when stored > 24 hr, cannot add-on after 24 hours of being brought "in-lab", * only when stored protected from light	Chronolab/WHO, BJH
Bilirubin, total	4 h (unprotected or protected from light)	1 d*	7 d*	6 m*	Darkness required when stored > 24 hr, cannot add-on after 24 hours of being brought "in-lab", * only when stored protected from light	Chronolab/WHO, BJH
BOHB	2 h	2 h	7 d	7 d		Stanbio Package Insert 2-8°C, Mayo Medical Laboratory, ARUP
Blood Gas Panel	15 min	N/A	1 h	N/A	2-8°C = on ice/ice+H2O slurry; venous and arterial	Scandinavian Journal Article, 2003 (See i:Drive), Tietz Textbook
BUN	1 d	7 d	7 d	1 y		Chronolab/WHO
C3	1 d	1 d	7 d	7 d		Roche Application Sheet
C4	1 d	1 d	7 d	10 d		Roche Application Sheet
Calcium (total)	2 d	7 d	3 w	8 m		Chronolab/WHO
Calcium, Ionized (Serum Only)	1 h	4 h	1 d	N/A	Spun gold top tube only, reject tubes that are less than 3/4 full. Cannot uncap sample until immediately before analysis	Mayo RT
Calcium, ionized (whole blood)	30 min	N/A	4 h	N/A	2-8°C = On Ice/Ice+H2O Slurry	Scandinavian Journal Article, 2003 (See i:Drive), Tietz Textbook
Cancer Antigen 15-3 (CA15-3)	12 h	2 d	5 d	3 m		Roche Application Sheet
Carbamazepine	2 d	5 d	7 d	1 m		Chronolab/WHO
Carbohydrate Antigen 19-9 (CA19-9)	12 h	5 d	14 d	3 m		Roche Application Sheet
Carbohydrate Antigen 125 (CA125)	12 h	8 h	5 d	24 w		Roche Application Sheet
Cardiolipin IgG/IgM	2 h	2 d	21 d	21 d		Mayo, ARUP
Cyclic Citrullinated Peptide (anti-CCP)	22 h	22 h	7 d	1 m		Abbott Application Sheet- Rt and 2-8 °C Roche Application Sheet -20°C
Ceruloplasmin	6 h	8 d	14 d	1 y		Roche Application Sheet
Chloride (Cl <sup>-</sup> )	1 d	7 d	7 d	1 y		Chronolab/WHO
Cholesterol	7 d	7 d	7 d	3 m		Chronolab/WHO
CK	2 d	2 d	7 d	1 m		Roche Application Sheet
CKMB	8 h	8 h	72 h	1 m		Abbott Application Sheet
CMV IgG	2 h	2 d	2 w	1 y		ARUP
CMV IgM	2 h	2 d	2 w	1 y		ARUP

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Co-ox Panel	30 min	N/A	1 h	N/A	Offsite: see procedure or BGAS stability chart; run immediately upon receipt and report out only	Scandinavian Journal Article, 2003 (See i:Drive), Tietz Textbook
Cortisol	7 d	7 d	7 d	1 m		Chronolab/WHO 20-25°C and 2-8°C, Roche Application Sheet -20°C
COVID-19 Ab	2 h	3 d	7 d	28 d	Only one freeze, thaw cycle possible	Roche Application Sheet
C-Peptide	8 h	1 d	2 d	3 m		Abbott Application Sheet
Creatinine	3 d	7 d	7 d	3 m		Chronolab/WHO
Cryoglobulin or Cryofibrinogen	1.AFTER DRAWING BLOOD, PLACE TUBE ON WARM (37° C) INFANT HEEL WARMER (PeopleSoft # 0036214) 2.DELIVER TO THE LABORATORY IMMEDIATELY (within 30 minutes of collection). 3.Sample must be received in the Laboratory wrapped in an infant heel warmer.					
cTnT	4 h	8 h	7 d	6 m		Roche Application Sheet
Cyclosporine	14 d	14 d	14 d	14 d	*Samples are whole blood, do not spin*	Mayo
Dehydroepiandrosterone sulfate (DHEAS)	1 d	1 d	5 d	2 w	Freeze sample if not analyzed immediately, label instructions will be "FREEZE FOR TRNSP"	Roche Application Sheet, WHO
Digoxin	1 d	1 d	1 d	7 d	Freeze sample if not analyzed immediately, label instructions will be "FREEZE FOR TRNSP"	Roche Application Sheet 2-8°C, -20°C
dsDNA	2 h	1 d	21 d	1 m		WHO, Mayo
EBV VCA IgG, IgM, EBNA IgG	2 h	2 d	14 d	1 y		ARUP
Estradiol	2 h	1 d	5 d	6 m		Roche Application Sheet
Ethanol (Alcohol)	4 h	8 h	1 d	7 d	Collect in Gray top tube, do not use alcohol wipes. Do not uncap until immediately prior to analysis	Roche Application Sheet
Ethylene Glycol Screen	4 h	8 h	1 d	7 d	Collect in Gray top tube, do not use alcohol wipes. Do not uncap until immediately prior to analysis	Same as Ethanol
Everolimus	7 d	7 d	14 d	14 d	*Samples are whole blood, do not spin*	Mayo
Ferritin	4 h	2 d	7 d	12 m		Roche Application Sheet
Free PSA	2 h	8 h	3 d	12 w		Roche Application Sheet
Free T3	12 h	5 d	7 d	30 d		Roche Application Sheet, BJH
Folate	1 h	2 h	3 d	28 d		Roche Application Sheet; I:\Chemistry\Chemistry Admin\Stability-Interference-Reference Ranges and other Referenced Sources
FT4	12 h	5 d	7 d	30 d		Roche Application Sheet
FSH	1 d	5 d	14 d	1 y		Roche Application Sheet
Gentamicin	4 h	4 h	7 d	1 m		Chronolab/WHO 20-25°C, -20°C Roche Application Sheet 2-8°C
GGT	1 d	7 d	7 d	1 y		Chronolab/WHO
Gliadin (deamidated) IgA, IgG	2 h	2 d	21 d	21 d		RT ARUP, Refrigerated/Frozen Mayo
Glucose - Grey Top	2 d	2 d	3 d	1 d		*Plasma stabilized by fluoride-Chronolab/WHO **Serum/heparinized plasma (Roche Application Sheet) ***Effectiveness of NaFl as a preservative of Glucose in Blood, Clin. Chem. 35/2 315-317 (1989) citation for NaFl RT and 2-8°C unspun
Glucose - Green/Gold/Red Top	1 h	8 h	7d	1 d		*Plasma stabilized by fluoride-Chronolab/WHO **Serum/heparinized plasma (Roche Application Sheet) ***Effectiveness of NaFl as a preservative of Glucose in
Haptoglobin	8 d	3 m	8 m	3 m		Roche Application Sheet
Hepatitis A IgM Antibody	2h	3 d	7 d	3 m		Roche Application Sheet 2-8°C, -20°C, Mayo RT
Hepatitis A Total Antibody	2h	3 d	7 d	3 m		Roche Application Sheet 2-8°C, -20°C, Mayo RT
Hepatitis B Core Antibody	2h	1 d	5 d	2 m		Roche Application Sheet 2-8°C, -20°C, Mayo RT
Hepatitis B Core IgM Antibody	2h	1 d	7d	3 m		Roche Application Sheet 2-8°C, -20°C, Mayo RT
Hepatitis B Surface Antibody (HBsAb)	2h	8 h	6 d	3 m		Roche Application Sheet 2-8°C, -20°C, Mayo RT
Hepatitis B Surface Antigen (HBsAG)	2h	1 d	5 d	3 m		Roche Application Sheet 2-8°C, -20°C, Mayo RT
Hepatitis C Antibody	2h	3 d	21 d	3 m		Roche Application Sheet
Hemoglobin A1C	1 d	1 d	7 d	6 m	*Samples are whole blood, do not spin*	Roche Application Sheet
HCG	1 d	5 d	14 d	12 m		Roche Application Sheet

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		20-25°C	2-8°C	-20°C		
HDL	2 d	2 d	7 d	1 m		Chronolab/WHO 20-25°C and 2-8°C, Roche Application Sheet -20°C
HGH	2 h	8 h	1 d	1 m		Roche Package Insert
Homocysteine	1 h	4 d	4 w	10 m		Roche Application Sheet
hsCRP	3d	11 d	2 m	3 y		Chronolab/WHO
HIV Antigen/Antibody Gen 4	1d	3 d	7 d	1 m	No more than five freeze, thaw cycles possible.	RT Unspun, per Mayo Abbott Application Sheet,
HSV 1&2	2 h	2 d	14 d	14 d		RT ARUP, Refrigerated/Frozen Mayo
IgG, IgA, IgM	7 d	7 d	1 m	6 m		Roche Application Sheet
IgE	2 h	7 d	7 d	6 m		WHO
IgE, Allergens	2 h	7 d	7 d	6 m		WHO
Immunfixation Electrophoresis (IFE)	1 d	1 d	7 d	6 m	Serum only Only one freeze, thaw cycle possible	Ellis, Jane M. et. al. : Hormone Stability in Human Whole Blood. Clinical Biochemistry, Vol. 36 (2003) 109-112
Insulin	2 h	4 h	2 d	6 m	Freeze sample if not analyzed immediately, label instructions will be "FREEZE FOR TRNSP"	Roche Application Sheet
Iron	2 h	7 d	3 w	1 y		Chronolab/WHO
Kappa Free Light Chains	7 d	7 d	21 d	6 m		Binding Site package inserts
Lactate (plasma)	60 min on ice (RT not accepted)	2 h	2 d	1 m	Freeze sample if not analyzed immediately	Roche Application Sheet 20-25°C, 2-8°C Chronolab/WHO -20°C,
Lactate (whole blood)	15 min	N/A	1 h	N/A	2-8°C = On Ice/Ice+H2O Slurry	Scandanavian Journal Article, 2003 (See i:Drive), Tietz Textbook
Lambda Free Light Chains	7 d	7 d	21 d	6 m		Binding Site package inserts
LDH	3 h	8 h	1 d*	N/A	*Based on modification of Roche package insert due to instability of LDH-4 and LDH-5 in certain diseases when refrigerated or frozen	RT spun and unspun: The Effect of Serum-Clot Contact Time on Clinical Chemistry Laboratory Results
LDL	1 d	1 d	7 d	1 m		Chronolab/WHO 20-25°C, Roche Application Sheet 2-8°C and -20°C
LH	1 d	5 d	14 d	6 m		Roche Application Sheet
Lipase	1 d	7 d	7 d	1 y		The Effect of Serum-Clot Contact Time on Clinical Chemistry Laboratory Results- unspun Roche Application Sheet
Lithium	4 h	1 d	7 d	6 m		Roche Application Sheet
Magnesium	1 d	7 d	7 d	1 y		Chronolab/WHO
Methotrexate	2 h	3 d	2 w	2 w		Ark Methotrexate Assay Insert, Mayo
MPO	2 h	2 d	21 d	21 d		RT ARUP, Refrigerated/Frozen Mayo
Mumps IgG	2 h	14 d	14 d	14 d		RT ARUP, Refrigerated/Frozen Mayo
Osmolality	2 h	8 h	7d	3 m		Chronolab/WHO
Phenobarbital	2 d	7 d	7 d	7 d		Roche Package Insert
Phenytoin (free)	4 h	4 d*	4 d*	1 m*	*Before filtering, but spun	Roche Cobas Package Insert
Phenytoin (total)	4 h	4 d	4 d	1 m		Roche Cobas Package Insert
Phosphorous	3 h	1 d	4 d	1 y		The Effect of Serum-Clot Contact Time on Clinical Chemistry Laboratory Results-unspun at RT Chronolab/WHO 0-25°, 2-8°C and -20°C
Potassium (K+)	3 h	2 w	2 w	1 y		The Effect of Serum-Clot Contact Time on Clinical Chemistry Laboratory Results- unspun Roche Application Sheet 20-25°C and 2-8°C Chronolab/WHO -20°C
Prealbumin	6 h	3 d	7 d	6 m		The Effect of Serum-Clot Contact Time on Clinical Chemistry Laboratory Results- unspun Chronolab/20-25°C
proBNP	2 d	3 d	6 d	24 m		Roche Application Sheet
Progesterone	2 h	1 d	5 d	6 m		20-25° and 4° based on DHMC study from 6/8/11 (RT) & 9/12/11 (Refrig): Roche Application Sheet -20°C
Prolactin	2 d	5 d	14 d	6 m		Roche Application Sheet
Protein Electrophoresis (PEP)	1 d	1 d	7 d	6 m	Serum only Only one freeze, thaw cycle possible	Sebia Package insert, C3 Information
PR3	2 h	2 d	21 d	21 d		RT ARUP, Refrigerated/Frozen Mayo
PSA (total)	1 d	1 d	3 d	24 w	Three freeze, thaw cycles possible	Roche Application Sheet
PTH (intact)	2 d*	2 d*	3 d*	6 m*	*EDTA only	WHO-unspun at RT; Roche Application Sheet 20-25°. 2-8°C and -20°C
Quantiferon	16 h	N/A	28 d	N/A	Samples must arrive w/in 16h of collection, must incubate at 37C for 16-24 h	Qiagen package insert
RHF	1 d	1 d	8 d	3 m	Only one freeze, thaw cycle possible	Roche Application Sheet
Rubella IgG Antibody	1 d	3 d	3 w	3 mo		Roche Application Sheet
Rubeola (measles)	2 h	2 d	14 d	1 y		ARUP

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		20-25°C	2-8°C	-20°C		
Salicylate	1 d	7 d	7 d	6 m		Chronolab/WHO 20-25°C, -20°C; Roche Application Sheet 2-8°C, B.JH
Sirolimus (Rapamycin)	14 d	14 d	14 d	14 d	*Samples are whole blood, do not spin*	Mayo
Sodium (Na+)	4 d	2 w	2 w	1 y		Chronolab/WHO
Syphilis	3 d	3 d	7 d	30 d		Abbott Architect i1000 Application sheet
Tacrolimus (FK506)	14 d	14 d	14 d	14 d	*Samples are whole blood, do not spin*	Mayo
Testosterone	2 h	1 d	7 d	6 m		The Effect of Serum-Clot Contact Time on Clinical Chemistry Laboratory Results- unspun Roche Application Sheet
Theophylline	2 h	3 d	7 d	2 m		Roche Application Sheet 2-8°C and -20°C, Mayo
Thyroglobulin	2 h	8 h	7 d	6 m		ARUP
Thyroglobulin Antibody	2 h	8 h	7 d	6 m		ARUP
Thyroid Stimulating Antibody	2 h	1 d	7 d	1 y		Package insert
Thyroperoxidase (TPO) Antibody	2 h	8 h	7 d	6 m		ARUP
Tobramycin	4 h	8 h	3 d	1 m	Freeze sample if not analyzed immediately, label instructions will be "FREEZE FOR TRNSP"	Roche Application Sheet, B.JH, Match Vanco
Total Protein	1 d	6 d	1 m	6 m	Plasma results higher due to fibrinogen (Biuret method)	Chronolab/WHO 20-25°C and 2-8°C, Roche Application Sheet -20°C
Toxoplasma IgG	2 h	1 d	14 d	14 d		ARUP RT, Mayo
Toxoplasma IgM	2 h	2 d	14 d	14 d		Room temp and re fridge source WHO
Triglyceride	2 d	2 d	7 d	1 y		Chronolab/WHO
TSH	8 h	8 d	14 d	24 m		Roche Application Sheet
T3	8 h	8 d	14 d	12 m		Roche Application Sheet
T4	8 h	4 d	8 d	12 m		Roche Application Sheet
T-up	8 h	8 d	14 d	24 m		Roche Application Sheet
Tryptase	2 h	2 d	7 d	14 d		RT ARUP, Mayo
TTG IgA	2 h	2 d	14 d	14 d		ARUP

Analytes	Unspun Blood Room Temperature 20-25°C	Post-Processing			Special Handling/Notes	Source/Remarks / Comments
		20-25°C	2-8°C	-20°C		
UIBC	6 h	4 d	7 d	1 y		Roche Application Sheet, BJH
Uric acid	3 d	3 d	7 d	6 m	See lab handbook for Rasburicase instructions	Chronolab/WHO
Valproic Acid	4 h	8 h	1 d	7 d	Freeze sample if not analyzed immediately, label instructions will be "FREEZE FOR TRNSP"	Roche Application Sheet
Vancomycin	4 h	2 d	14 d	12 m	Freeze sample if not analyzed immediately, label instructions will be "FREEZE FOR TRNSP"	Roche Application Sheet
Vitamin B12	6 h	8 h	3 d	2 m		Roche Application Sheet; I:\Chemistry\Chemistry Admin\Stability-Interference-Reference Ranges and other Referenced Sources
Vitamin D	3 d	3 d	7 d	1 y		Chronolab
Volatile Alcohol Screen (Methanol, Acetone, Ethanol, and Isopropanol)	4 h	8 h	1 d	7 d	Collect in Gray top tube, do not use alcohol wipes. Do not uncap until immediately prior to analysis	Match ethanol data
VZV IgG	2 h	2 d	14 d	1 y		ARUP

Data for these charts linked to the previous pages

Comprehensive Metabolic Panel (CMP)					
Albumin	6 d	10 w	5 m	4 m	
Alkaline Phosphatase	4 d	7 d	7 d	2 m	
ALT	3 d	3 d	7 d	7 d	
AST	1 d	1 d	7 d	3 m	
Bilirubin total	4 h (unprotected or protected from light)	1 d*	7 d*	6 m*	Darkness required when stored > 24 hr, cannot add-on after 24 hours of being brought "in-lab", * only when stored protected from light
BUN	1 d	7 d	7 d	1 y	
Calcium (total)	2 d	7 d	3 w	8 m	
Chloride (Cl-)	1 d	7 d	7 d	1 y	
Bicarbonate (CO2)	6 h, if unopened	1 d*	7 d*	14 d*	*If tube has never been uncapped
Creatinine	3 d	7 d	7 d	3 m	
Glucose - Green Top	1 h	8 h	7 d	1 d	
Potassium (K+)	3 h	2 w	2 w	1 y	
Sodium (Na+)	4 d	2 w	2 w	1 y	
Total Protein	1 d	6 d	1 m	6 m	Plasma results higher due to fibrinogen (Biuret method)

Basic Metabolic Panel (BMET)					
BUN	1 d	7 d	7 d	1 y	
Calcium (total)	2 d	7 d	3 w	8 m	
Chloride (Cl-)	1 d	7 d	7 d	1 y	
Bicarbonate (CO2)	6 h, if unopened	1 d*	7 d*	14 d*	*If tube has never been uncapped
Creatinine	3 d	7 d	7 d	3 m	
Glucose - Green Top	1 h	8 h	7 d	1 d	
Potassium (K+)	3 h	2 w	2 w	1 y	
Sodium (Na+)	4 d	2 w	2 w	1 y	

Hepatic Function Panel (HFP)					
Albumin	6 d	10 w	5 m	4 m	
Alkaline Phosphatase	4 d	7 d	7 d	2 m	
ALT	3 d	3 d	7 d	7 d	
AST	1 d	1 d	7 d	3 m	
Bilirubin Direct	4 h (unprotected or protected from light)	1 d*	7 d*	6 m*	Darkness required when stored > 24 hr, cannot add-on after 24 hours of being brought "in-lab", * only when stored protected from light
Bilirubin Total	4 h (unprotected or protected from light)	1 d*	7 d*	6 m*	Darkness required when stored > 24 hr, cannot add-on after 24 hours of being brought "in-lab", * only when stored protected from light
Total Protein	1 d	6 d	1 m	6 m	Plasma results higher due to fibrinogen (Biuret method)

Electrolytes (Lytes)					
Chloride (Cl-)	1 d	7 d	7 d	1 y	
Bicarbonate (CO2)	6 h, if unopened	1 d*	7 d*	14 d*	*If tube has never been uncapped
Potassium (K+)	3 h	2 w	2 w	1 y	
Sodium (Na+)	4 d	2 w	2 w	1 y	

Lipid Profile					
Cholesterol	7 d	7 d	7 d	3 m	
HDL	2 d	2 d	7 d	1 m	
Triglyceride	2 d	2 d	7 d	1 y	