



Reference Ranges Guide
for Client Facilities - **December 2022**

Normal And Panic Ranges

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For the most recent reference ranges guide, check:
www.aculabs.com/support-home/test-directory-forms/

JANUARY 2019 - PRESENT CHANGE LOG:

January 24, 2019:

Prothrombin Time reference range changed from "9.4-12.5 sec" to "10.4-12.6 sec".
INR reference range changed from "0.8-1.2" to "0.9-1.1".

April 24, 2019:

ABS. Neut reference range changed from "1.6-8.3 K/cumm" to "1.6-6.1 K/cumm".
ABS. Lympho reference range changed from "1.4-2.9 K/cumm" to "1.2-3.7 K/cumm".
% Neutophils reference range changed from "55.0%-70.0%" to "34.0%-71.0%".
% Lymphocytes reference range changed from "20.0%-40.0%" to "19.3%-51.7%".
% Monocytes reference range changed from "0.0%-10.0%" to "4.7%-12.5%".
% Eosinophils reference range changed from "0.0%-5.0%" to "0.0%-7.0%".
% Basophils reference range changed from "0.0%-2.0%" to "0.0%-1.2%".
MCV reference range changed from "81-99 fL" to "81-100 fL".
MCH referange range changed from "27-31 pg" to "25-32 pg".
RDW reference range changed from "12.1-15.2%" to "11.6-14.4%".
MPv reference range changed from "7.4-10.4 fL" to "9.4-12.4 fL".
Fibrinogen (#955) removed.

May 24, 2019:

Troponin 1 reference range changed from "<0.3 ng/ml" to "<0.06 ng/ml".
Troponin 1 panic range changed from ">0.3" to ">0.1".

November 20, 2019:

Chlorides (CL) panic range changed from "<90 and >115" to "<80 and >125".
PH reference range changed from "5.0-9.0" to "5.0-8.0".

September 22, 2020:

Magnesium panic range changed from ">5.0" to "<1.0 and >5.0".
Phosphorus panic range changed to "<1.0 and >9.0".
Platelets panic range changed from "<75 and >800" to "<40 and >800".
Prothrombin Time reference range changed from "10.4-12.6 sec" to "10.9-12.5 sec".
INR reference range changed from "0.9-1.1" to "0.8-1.1".
Homocysteine (#3334) removed.
SARS-CoV-2 added.
Immature Granulocytes (#210) added.
D-Dimer HS 500 (#619) added.
Group A strep from a wound or body fluid added.

November 5, 2020:

Direct Bilirubin panic range changed from ">5.0" to ">3.0".
Troponin I reference range changed from "<0.06 ng/mL" to "<45 ng/L".
Troponin I panic range changed from ">0.1" to ">100".
Immature Retic Fraction (#624) added.
RET-He (#296) added.

March 1, 2021:

Immature Platelets Fraction (#622) added.

October 13, 2022:

Prothrombin Time reference range changed from "10.9-12.5 sec" to "10.2-12.1 sec".

December 13, 2022:

Prothrombin Time reference range changed from "10.2-12.1 sec" to "10.9-12.5 sec".
Lactic Acid (#252) added.
Tobramycin Trough (#763) removed.
Tobramycin Peak (#764) removed.

Analyte	Test Code	Analyte	Reference range	Panic range	
TDM:	329	Carbamazepine (Tegretol)	4.0 -12 ug/mL	>12.0	
	789	Depak (valproic acid)	50 - 100 ug/mL	>100.0	
	300	Digoxin	0.6 - 1.2 ng/mL	>2.0	
	771	Gentamicin Peak	5.0 - 10.0 ug/mL	>10.0	
	786	Gentamicin trough	0.5 - 2.0 ug/mL	>4.0	
	350	KEPPRA (Levetiracetam)	6.0-46 ug/mL	>50.0	
	129	Lithuim	0.6 - 1.2 mmol/L	>1.5	
	320	Phenobarbital	10.0 - 40 ug/mL	>45.0	
	301	Phenytoin (Dilantin)	10.0 - 20.0 ug/mL	>25.0	
	321	Theophylline	10.0 - 20.0 ug/mL	>25	
	893	Vancomycin Peak	20.0 - 40.0 ug/mL	>40.0	
	894	Vancomycin Trough	10.0 - 20.0 ug/mL	>25.0	
	Thyroid Funtion:	303	T 3 uptake	28 % - 41 %	
		3224	Total T3	80-200 ng/dL	
304		Thyroxin (T4)	4.5 - 11.7 ug/dL		
327		Thyroid Stimulating Hormone (TSH)	0.3 - 4.2 uIU/mL		
703		Free T3	2.0 - 4.4 pg/mL		
704		Free T4	0.9 - 1.7 ng/dL		
Parathyroid Hormone:	712	Parathyroid Hormone Intact (PTH I)	15-65 pg/mL		
Lipid:	105	Cholesterol	< 200 mg/dL		
	193	Triglycerides	<150 mg/dL		
	192	HDL	>40 mg/dL		
Tumor Markers:	3109	AFP	<8.3 ng/mL	>15	
	328	Prostate Specific Antigen (PSA)	<4.0 ng/mL	>12.0	
	332	Carcinembrionic Antigen (CEA)	Nonsmoker <3.8 ng/mL Smoker <5.5 ng/mL	>75	
	680	Cancer Antigen 125 (CA 125)	<38.1 U/mL		
Anemia:	347	B12	232-1245 pg/mL		
	348	Folate (Folic Acid)	>4 ng/mL		
	324	Ferritin	M 30 - 400 ng/mL F 10 - 200 ng/mL		
Chemistry:	107	Albumin	3.5 - 5.2 g/dL		
	109	Alkaline Phosphatase (ALP)	35-129 U/L	>500	
	120	ALT (SGPT)	<40 U/L		
	139	Ammonia	11-60 umol/L	>150	
	143	Amylase	28 - 100 U/L	>200	
	111	AST (SGOT)	<40 U/L	>100	
	7533	BNP	<100 pg/mL	>300	
	100	Calcium	8.4 - 10.2 mg/dL	< 6.5 and >14.0	
	118	Chlorides (Cl)	98 - 107 mmol/L	< 80 and >125	
	138	CK	M 39 - 308 U/L F 26 - 192 U/L	>400	
	145	CK-MB	< 5.0 ng/mL	>25	
	167	CO2	22 - 32 mmol/L	< 15 and >40	
	3128	Cortisol AM	5-20 µg/dL		
	770	Cortisol PM	2.5-12 µg/dL		
	509	C-Reactive Protein (hs-CRP)	<1.0 mg/L		
	507	C-Reactive Protein (Inflammatory)	<8.0 mg/L		
	101	Creatinine	0.6 - 1.5 mg/dL	>5.0	
	136	Direct Bilirubin	<0.3 mg/dL	>3.0	
	121	GGT (GGPT)	M 8 - 61 U/L F 5 - 36 U/L	>700	
	102	Glucose	65 - 99 mg/dL	<40 and >350	
	157	Glucose Post prand	140 - 200 mg/dL	>450	
	124	Glyco	<5.7%		
	125	Iron (Fe)	M 59 - 158 ug/dL F 37 - 145 ug/dL		
	252	Lactic Acid	0.5-2.2 mmol/L	>2.5	
	110	LDH	135 - 225 U/L	>500	
	346	LIPASE	13 - 60 U/L		
	142	Magnesium	1.6 - 2.6 mg/dL	<1.0 and >5.0	
	144	Phosphorus	2.5 - 4.5 mg/dL	<1.0 and >9.0	
	117	Potassium (K)	3.5 - 5.3 mmol/L	< 2.8 and >5.8	
	4847	PreAlbumin	20 - 40 mg/dL		
	3444	ProBNP	<125 pg/mL for <75Y <450 pg/mL for >75Y	>450 for <75Y >900 for >75Y	
	369	Procalcitonin	<0.05 ng/mL	>0.5	
	3206	Prolactin	M 4.0 - 15.2 ng/mL F 4.8 - 23.3 ng/mL		
	116	Sodium (Na)	135 - 145 mmol/L	< 125 and >155	
	3244	Testosterone	M 193 - 827 ng/dL F < 48 ng/dL		
	108	Total Bilirubin	<1.2 mg/dL	>10.0	
	106	Total Protein (TP)	6.4 - 8.3 g/dL		
	960	Troponin I	<45 ng/L	>100	
	126	UIBC(unsaturated Binding Cap.)	112 - 347 ug/dL		
	103	Urea Nitrogen (BUN)	8 - 23 mg/dL	>80.0	
104	Uric Acid	M 3.5 - 8.4 mg/dL F 2.2 - 7.3 mg/dL			
3521	Vitamin D	> 30 ng/mL			
Hematology:	200	White Blood Cells	3.5-11.0 K/cumm	< 2.5 and >25.0	
	222	ABS. Neut	1.6-6.1 K/cumm		

Analyte	Test Code	Analyte	Reference range	Panic range
	223	ABS. Lympho	1.2-3.7 K/cumm	
	209	% Neutophils	34.0 % - 71.1 %	
	211	% Lymphocytes	19.3 % - 51.7 %	
	212	% Monocytes	4.7 % - 12.5 %	
	673	% Eosinophils	0.0 % - 7.0 %	
	672	% Basophils	0.0 % - 1.2 %	
	210	Immature Granulocytes	0.0 - 0.4%	
	201	RBC	M 3.6 - 5.6 M/cu.mm, F 3.3 - 4.9 M/cu.mm	< 2.0 and >7.5
	203	Hematocrit	M 36 - 51 % F 32 - 46 %	<25.0% and >55%
	202	Hemoglobin	M 12.1 - 17.1 g/dL F 10.7 - 15.1 g/dL	<8.0 and >18.0
	204	MCV	81 - 100 fL	
	205	MCH	25 - 32 pg	
	206	MCHC	31 - 36 g/dL	
	207	RDW	11.6 - 14.4 Percent	
	208	Platelets	126 - 400 K/cumm	<40 and >800
	213	MPV	9.4 - 12.4 fL	
	622	Immature Platelets Fraction	1.2%-8.7%	
	219	Retic Count	0.2% - 2.5%	
	624	Immature Retic Fraction	M 2.3 - 13.4 % F 3.0 - 15.9 %	
	296	RET-He	28.2 - 36.6	
	600	Sedimentation Rate	M: <15 mm/h for <50Y <20 mm/h for >50Y F: <20 mm/h for <50Y <30 mm/h for >50Y	
	619	D-Dimer HS 500	<500 ng/mL FEU	
	601	Prothrombin time	10.9 - 12.5 sec	< 9.0 and >99.9
	608	INR	0.8 - 1.1	< 0.8 and >4.0
	604	PTT	25.1 - 36.5 sec	<18 sec and >55
Urine:	4001	Color	Yellow	
	4002	Clarity	Clear	
	400	Glucose	Negative	
	401	Bilirubin	Negative	
	402	Ketone	Negative	
	403	Spec. Gravity	<1.030	
	404	Blood	Negative	
	405	PH	5.0-8.0	
	406	Protein	Negative	
	408	Nitrites	Negative	
	409	Leukocyte	Negative	
	168	Sodium, Urine/Random	No ref. range est.	
	430	Sodium, Urine/24 HR	40-220 mmol/24 hr	
	170	Chloride, Urine/Random	No ref. range est.	
	428	Chloride, Urine/24 HR	110-250 mmol/24 hr	
	169	Potassium, Urine/Random	No ref. range est.	
	427	Potassium, Urine/24 HR	25-125 mmol/24hr	
	423	Creatinine, Urine/Random	No ref. range est.	
	424	Creatinine, Urine/24 HR	M 1.0 - 2.3 g/24hr, F 0.4- 1.6 g/24hr	
	420	Urine volume/24 HR	800-2000 mL/24hr	
	450	Creatinine Clearance	71-151 mL/min	
	425	Total Proteine, Urine/24 HR	<150 mg/24hr	
	406Q	Total Protein, Urine/Random	No ref. range est.	
	4555	Microalbumin, Urine/24 HR	<30 mg/24hr	
	6517	Microalbumin,Urine/Random	No ref. range est.	
Drug Screen:		Amphetamine	Negative	
		Barbiturates	Negative	
		Benzodiazpines	Negative	
		Cannabinoids (THC)	Negative	
		Cocaine netabolites	Negative	
		ETOH	Negative	
		Opiate	Negative	
		Phencyclidine (PCP)	Negative	
Microbiology:		Microorganism in the blood	Negative	Positive
		Clinical Significant microorganism from a sterile body site	Negative	Positive
		Group A strep from a wound or body fluid	Negative	Positive
		Initial stool isolates of Salmonella, Shegella and Campylobacter, Clostridium Difficile	Negative	Positive
		Other microbiology critical values: Methicillin Resistant Staphylococcus Aureus(MRSA), Vancomycin Resistant Enterococcus (VRE), Multi-drug Resistant organism (MDR) and Extended-Spectrum Beta Lactamse (ESBL), Influenza A/B	Negative	Positive

"NOTE: The reference ranges provided above were last updated on: **December 13th, 2022**
Facilities should visit www.aculabs.com to check for most recent reference ranges if above is out-dated.
Clients are encouraged to check for new reference ranges every quarter."