

technical bulletin

Charles River Laboratories

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**Baseline Hematology and Clinical Chemistry Values
for Charles River Wistar Rats - (CRL:(WI)BR)
as a Function of Sex and Age**

MALE Crl:(WI)BR Rats

Test	6-8 Weeks			19-21 Weeks			32-34 Weeks		
	\bar{X}	Range \pm 2S.D.	N	\bar{X}	Range \pm 2S.D.	N	\bar{X}	Range \pm 2S.D.	N
HEMATOLOGY									
Hematocrit (%)	36	(32-40)	168	41	(36-46)	29	42.0	(39-48)	15
Hemoglobin (gm/dl)	13.5	(12.2-14.8)	170	16.0	(14.4-17.6)	28	15.5	(14.7-18.0)	15
RBCS ($\times 10^6/\text{mm}^3$)	6.46	(5.79-7.14)	166	8.31	(7.37-9.25)	29	8.4	(7.74-9.72)	15
WBCS ($\times 10^3/\text{mm}^3$)	8.66	(5.10-12.16)	162	9.37	(6.19-12.55)	30	7.8	(5.29-10.80)	15
DIFFERENTIAL (%)									
Segmented Neutrophils	12	(2-22)	167	15	(1-29)	26	18	(12-34)	15
Band Neutrophils	0	(0-2)	170	0	(0-2)	30	0	(0-0)	15
Lymphocytes	85	(76-98)	166	82	(70-99)	27	80	(65-86)	15
Monocytes	2	(0-6)	170	2	(0-6)	30	0	(0-0)	15
Eosinophils	1	(0-3)	170	1	(0-3)	30	2	(0-3)	15
Basophils	0	(0-2)	170	0	(0-2)	30	0	(0-0)	15
Atypicals	0	(0-2)	170	0	(0-2)	30	0	(0-0)	15
Nucleated RBCS (per 100 WBCS)	0	(0-2)	170	0	(0-2)	30	0	(0-1)	15
Platelets ($\times 10^3/\text{mm}^3$) (Estimated)	7.00	—	—	7.00	—	—	7.00	—	15
ERYTHROCYTE INDICES									
MCV (μ^3)	56	(53-59)	167	50	(47-52)	30	50.1	(48-53)	15
MCHC (%)	37	(33-41)	169	39	(35-43)	29	37.0	(34-38)	15
MCH (μgm)	20	(18-22)	170	19	(17-21)	30	18.5	(17-20)	15
CLINICAL CHEMISTRY									
Glucose (mg/dl)	130	(108-153)	170	115	(100-130)	28	118.1	(77-141)	15
Bun (mg/dl)	19	(15-23)	170	19	(16-23)	30	21.6	(18-25)	15
ALK PHOS. (IU/L)	238	(149-328)	166	137	(56-216)	29	103.1	(56-145)	15
Sgpt (IU/L)	24	(4-44)	166	31	(20-42)	30	38.7	(20-81)	15
Sgot (IU/L)	66	(37-94)	169	62	(39-84)	29	70.4	(41-115)	15
Sodium (mEq/L)	143	(140-146)	169	145	(141-149)	30	147.4	(145-150)	15
Potassium (mEq/L)	6.9	(6.1-7.7)	164	6.5	(5.2-7.8)	29	6.2	(5.7-7.1)	15
Chloride (mEq/L)	102	(99-106)	169	105	(102-109)	29	109.9	(105-126)	15
Total Protein (gm/dl)	6.0	(5.4-6.6)	168	7.2	(6.5-7.8)	29	6.9	(6.3-7.7)	15
Albumin (gm/dl)	3.7	(3.0-4.4)	168	4.0	(3.3-4.7)	29	3.9	(3.5-4.2)	15
Globulin (gm/dl)	2.3	(1.7-2.8)	170	3.2	(2.5-3.8)	29	3.0	(2.6-3.5)	15
A/G Ratio	1.6	(1.0-2.2)	169	1.3	(0.8-1.7)	29	1.3	(1.0-1.6)	15

N = Number of Animals Represented
 \bar{X} = Mean

FEMALE Crl:(WI)BR Rats

Test	6-8 Weeks			19-21 Weeks			32-34 Weeks		
	\bar{X}	Range \pm 2S.D.	N	\bar{X}	Range \pm 2S.D.	N	\bar{X}	Range \pm 2S.D.	N
HEMATOLOGY									
Hematocrit (%)	38	(34-42)	167	40	(35-44)	28	40.7	(35-44)	15
Hemoglobin (gm/dl)	14.1	(12.9-15.3)	170	15.6	(14.1-17.1)	27	16.3	(15.2-19.3)	15
RBCS ($\times 10^6/\text{mm}^3$)	6.92	(6.20-7.64)	167	7.81	(6.86-8.75)	29	7.8	(6.92-8.78)	15
WBCS ($\times 10^3/\text{mm}^3$)	6.96	(4.19-9.73)	161	8.43	(4.77-12.08)	28	6	(4.60-13)	15
DIFFERENTIAL (%)									
Segmented Neutrophils	13	(1-25)	170	17	(1-32)	28	23	(10-40)	15
Band Neutrophils	0	(0-2)	170	0	(0-2)	29	0.07	(0-1)	15
Lymphocytes	84	(74-98)	168	80	(67-98)	29	75	(58-90)	15
Monocytes	2	(0-6)	170	2	(0-6)	29	0.07	(0-1)	15
Eosinophils	1	(0-3)	170	1	(0-3)	29	2	(0-6)	15
Basophils	0	(0-2)	170	0	(0-2)	29	0.00	(0-0)	15
Atypicals	0	(0-2)	170	0	(0-2)	29	0.00	(0-0)	15
Nucleated RBCS (per 100 WBCS)	0	(0-2)	170	0	(0-2)	29	0.00	(0-0)	15
Platelets ($\times 10^5/\text{mm}^3$) (Estimated)	7.00	—	—	7.00	—	—	7.00	—	—
ERYTHROCYTE INDICES									
MCV (μ^3)	55	(52-59)	168	53	(49-56)	28	52.40	(50-57)	15
MCHC (%)	36	(34-39)	169	38	(34-42)	27	40.27	(36-45)	15
MCH (μgm)	20	(19-21)	170	20	(18-22)	28	21.00	(18-23)	15
CLINICAL CHEMISTRY									
Glucose (mg/dl)	131	(113-149)	170	109	(85-132)	29	117.1	(91-140)	15
Bun (mg/dl)	21	(16-27)	170	22	(17-26)	29	20.2	(18-24)	15
ALK PHOS. (IU/L)	172	(93-251)	170	108	(39-177)	28	56.9	(36-111)	15
Sgpt (IU/L)	22	(8-37)	169	33	(17-50)	29	53.6	(20-268)	15
Sgot (IU/L)	67	(47-88)	170	66	(40-92)	28	141.8	(43-1120)	15
Sodium (mEq/L)	143	(140-147)	170	145	(139-150)	28	146.4	(145-149)	15
Potassium (mEq/L)	6.5	(5.8-7.3)	165	6.0	(4.8-7.2)	29	5.6	(4.9-6.6)	15
Chloride (mEq/L)	104	(99-108)	169	106	(99-114)	29	107.1	(105-113)	15
Total Protein (gm/dl)	6.4	(6.0-6.9)	170	7.5	(6.3-8.6)	29	7.6	(6.8-8.4)	15
Albumin (gm/dl)	4.1	(3.6-4.6)	169	4.3	(3.7-4.9)	29	4.4	(4.1-4.7)	15
Globulin (gm/dl)	2.4	(1.9-2.9)	170	3.1	(2.4-3.9)	29	3.3	(2.5-4.1)	15
A/G Ratio	1.7	(1.2-2.2)	170	1.4	(1.1-1.7)	29	1.4	(1.0-1.7)	15

METHODOLOGY

HEMATOLOGY

<i>Test</i>	<i>Unit</i>	<i>Method</i>
Hematocrit	%	Coulter Counter, Model ZBI-6
Hemoglobin	gm/dl	Coulter Hemoglobinometer
Erythrocyte Count	$\times 10^6/\text{mm}^3$	Coulter Counter, Model ZBI-6
Total Leukocyte Count	$\times 10^3/\text{mm}^3$	Coulter Counter, Model ZBI-6
Differential Leukocyte Count	%	Stained Blood Smear (Manual Count)
Platelet Estimate	$\times 10^5/\text{mm}^3$	Stained Blood Smear
Mean Corpuscular Volume (MCV)	μ^3	Coulter Counter, Model ZBI-6
Mean Corpuscular Hemoglobin Concentration (MCHC)	%	Calculated
Mean Corpuscular Hemoglobin (MCH)	μgm	Calculated

CLINICAL CHEMISTRY

Glucose*	mg/dl	Hexokinase
Blood Urea Nitrogen (BUN)*	mg/dl	Mod. Urease
Alkaline Phosphatase*	IU/L	Mod. Bessey-Lowry-Brock (PNPP)
Serum Glutamic Pyruvic Transaminase (SGPT)*	IU/L	Mod. Wroblewski
Serum Glutamic Oxaloacetic Transaminase (SGOT)*	IU/L	Mod. Karmen
Sodium	mEq/L	Corning Flame 460
Potassium	mEq/L	Corning Flame 460
Chloride	mEq/L	Corning Chloride Meter 920M
Total Protein*	gm/dl	Biuret
Albumin*	gm/dl	Bromocresol Green
Globulin	gm/dl	By Difference
A/G Ratio		Calculated

*Baker CentrifChem®

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251 Ballardvale Street, Wilmington, MA 01887

(978) 658-6000 FAX (978) 658-7132 • www.criver.com E-mail: comments@criver.com

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