



RESEARCH MODELS

New Zealand White Rabbit

Nomenclature: Crl:KBL(NZW)

Research Applications

- Immunology research
- Toxicology and safety testing
- Teratology
- Cardiovascular research
- Atherosclerosis research
- Polyclonal antibodies production
- Ophthalmology
- Infectious diseases

Strain Origin

The New Zealand White (NZW) rabbit was obtained in 1991 by Charles River Canada from Kitayama Labs K.K. of Nagano Prefecture, Japan.

Coat Color

White (albino)

Bred In

Canada, France

Note: Physiological values, Rabbit Enrichment Program, and biochemistry data listed below are based on the NZW colony bred in Charles River Canada.

Colony Overview

Charles River adheres to strict biosecurity practices when breeding our NZW rabbits to ensure the highest standards in health and genetics. The rabbits are maintained as an outbred colony, housed in HEPA-filtered barrier rooms, and bred via a pair mating system.

Health Monitoring Program

The rabbits are maintained under a VAF/Plus® (SOPF) health status, indicating the colony has been tested for, and is free of, an extensive list of viruses and other pathogens. On a quarterly basis, we evaluate eight animals, four rabbits age three to five months old and four of at least six months of age (typically retired breeders), from each production colony via a comprehensive health monitoring program, which includes bacteriology, parasitology, gross pathology, and serology (assessment profile). Rabbit colonies are also screened quarterly for all Helicobacter species infection by polymerase chain reaction (PCR) methods. In addition, each colony is tested annually by PCR for an extensive list of bacteria and some parasites and fungi using our PRIA PCR panel.

EVERY STEP OF THE WAY

Our extensive health monitoring program has made us successful in maintaining SPF health status for over 25 years. Access our [updated health reports](#) for our information on rabbit barrier production colonies.

Normal Physiological Values

The following information represents the normal physiological values for the NZW rabbit. They may vary due to factors such as breeding, animal care, and environmental and housing programs.

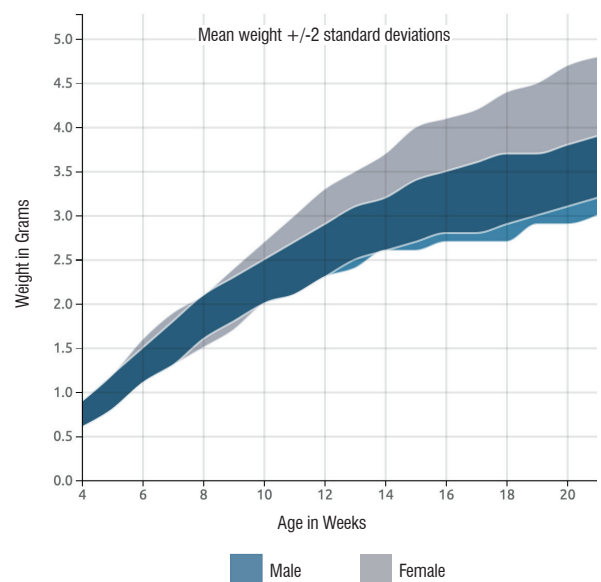
Parameter	Value
Body Temperature	38 - 40 °C 100.4 - 104 °F
Heart Rate (beats per minute)	130 - 325
Respiration Rate (per minute)	30 - 60
Weight Range Adult Male	2 - 6 kg
Weight Range Adult Female	2 - 6 kg
Weight Neonate	30 - 80 grams
Water Consumption (daily)	100 - 600 ml
Food Consumption (daily)	100 - 300 grams
Life Span	5 - 8 years
Sexual Maturity Age	4 - 6 months
Estrous Cycle Frequency	Induced
Duration of Estrus	N/A
Gestation Period	29 - 35 days
Breeding Life	3 years

Source: *Handbook of Clinical Signs in Rodents*, 2nd Edition, Charles River

Rabbit Enrichment Program – True Differentiator

Charles River's Rabbit Enrichment Program socialization has improved our NZW rabbit behaviors through the following:

- Room music for eight hours per day
- Each animal is handled weekly for a minimum of 45 seconds, starting at five-day-old kits
- Group housing (up to 2.1 kg)
- Flat (perforated) cage bottoms
- Dumbbells and chains supplied for cage enrichment
- Resting pads are provided as needed



Charles River Crl:KBL(NZW) Data

Biochemistry

Approximate age: All ages

Parameter and unit		N	Mean	SD	Mean +/- 2 SD		Min	Max
Alanine Aminotransferase (U/L)	M	39	32.8	11.1	10.7	54.9	15	62
	F	39	34.4	10.1	14.3	54.5	19	59
Albumin (g/dL)	M	39	4.38	0.31	3.77	5.00	3.7	4.9
	F	39	4.17	0.22	3.73	4.62	3.7	4.5
Albumin/Globulin Ratio (ratio)	M	39	2.91	0.46	1.99	3.83	2.2	3.9
	F	39	2.72	0.36	2.00	3.44	2.1	3.5
Alkaline Phosphatase (U/L)	M	39	78.4	23.9	30.6	126.1	40	136
	F	39	85.6	33.3	19.1	152.2	28	160
Amylase (U/L)	M	10	333.3	30.0	273.3	393.3	285	370
	F	10	322.9	60.5	201.9	443.9	234	414
Aspartate Aminotransferase (U/L)	M	39	16.4	3.8	8.8	24.1	8	29
	F	39	17.3	5.0	7.4	27.2	9	34
Bile Acids (umol/L)	M	10	8.41	6.70	0.00	21.82	0.5	20.9
	F	10	9.69	4.51	0.67	18.71	5.6	20.8
Calcium (Alternate) (mg/dL)	M	21	12.94	0.37	12.21	13.68	12.4	13.8
	F	21	12.50	0.28	11.94	13.07	12.1	13.2
Calcium (mg/dL)	M	18	13.70	0.52	12.67	14.73	12.9	15.0
	F	18	13.33	0.71	11.92	14.74	12.2	14.8
Chloride (SI) (mmol/L)	M	39	103.3	2.2	98.9	107.7	96	106
	F	39	104.7	2.3	100.1	109.4	96	109
Cholesterol (mg/dL)	M	39	29.6	8.9	11.7	47.5	11	53
	F	39	51.5	13.5	24.6	78.4	30	97
Creatine Kinase (U/L)	M	39	470.1	250.3	0.0	970.8	230	1523
	F	39	645.2	492.5	0.0	1630.2	244	2542
Creatinine (mg/dL)	M	39	1.04	0.14	0.77	1.32	0.8	1.3
	F	39	1.23	0.19	0.85	1.60	0.7	1.6
Direct Bilirubin (mg/dL)	M	10	0.000	0.000	0.000	0.000	0.00	0.00
	F	10	0.000	0.000	0.000	0.000	0.00	0.00
Gamma Glutamyl Transferase (U/L)	M	39	7.5	2.4	2.7	12.2	3	14
	F	39	7.9	1.9	4.1	11.8	4	12
Globulin (g/dL)	M	39	1.53	0.23	1.06	2.00	1.1	2.0
	F	39	1.56	0.21	1.14	1.98	1.2	2.0
Glucose (mg/dL)	M	39	135.5	9.6	116.4	154.7	103	158
	F	39	133.5	14.1	105.3	161.6	119	189
HDL Cholesterol (mg/dL)	M	10	18.3	4.3	9.6	27.0	10	26
	F	10	27.6	6.6	14.5	40.7	18	39
Lactate Dehydrogenase (U/L)	M	10	136.9	30.8	75.3	198.5	98	207
	F	10	160.0	53.5	53.0	267.0	115	275
Lipase (U/L)	M	10	154.4	23.2	108.1	200.7	126	195
	F	10	178.6	43.1	92.3	264.9	140	259
Magnesium (mg/dL)	M	10	2.25	0.19	1.87	2.63	1.9	2.5
	F	10	2.23	0.21	1.81	2.65	1.9	2.5

Coagulation

Approximate age: All ages

Parameter and unit	N	Mean	SD	Mean +/- 2 SD		Min	Max	
Activated Partial Thromboplastin T M (sec)	M	38	17.62	2.13	13.36	21.89	12.1	21.4
	F	37	18.55	2.16	14.23	22.86	11.9	22.5
Fibrinogen (mg/dL)	M	38	317.6	62.8	191.9	443.3	229	514
	F	37	291.8	65.7	160.3	423.2	206	490
Prothrombin Time (sec)	M	38	8.54	0.45	7.64	9.45	7.8	9.5
	F	37	8.38	0.51	7.37	9.39	7.4	9.7

Hematology

Approximate age: All ages

Parameter and unit	N	Mean	SD	Mean +/- 2 SD		Min	Max	
Basophils (10 ³ /uL)	M	39	0.366	0.090	0.187	0.546	0.20	0.59
	F	39	0.378	0.126	0.127	0.630	0.19	0.64
Basophils Percent (%)	M	10	5.33	0.98	3.38	7.28	4.3	6.7
	F	10	5.67	1.63	2.40	8.94	3.6	8.8
Eosinophils (10 ³ /uL)	M	39	0.091	0.042	0.007	0.174	0.04	0.26
	F	39	0.101	0.038	0.024	0.178	0.02	0.21
Eosinophils Percent (%)	M	10	1.25	0.57	0.11	2.39	0.7	2.5
	F	10	1.42	0.47	0.48	2.36	0.9	2.5
Hematocrit (%)	M	39	41.69	3.52	34.65	48.74	33.1	48.1
	F	39	40.30	3.15	33.99	46.61	33.5	48.7
Hemoglobin (g/dL)	M	39	13.69	1.10	11.50	15.89	11.1	15.5
	F	39	13.19	1.03	11.13	15.26	11.0	15.5
Large Unstained Cells (10 ³ /uL)	M	39	0.018	0.019	0.000	0.056	0.00	0.12
	F	38	0.019	0.015	0.000	0.048	0.00	0.06
Large Unstained Cells Percent (%)	M	10	0.24	0.08	0.07	0.41	0.1	0.4
	F	10	0.22	0.13	0.00	0.48	0.0	0.5
Lymphocytes (10 ³ /uL)	M	39	4.997	1.493	2.011	7.983	2.98	11.43
	F	39	4.720	1.200	2.320	7.119	2.42	7.23
Lymphocytes Percent (%)	M	10	76.13	2.94	70.24	82.02	71.2	80.3
	F	10	71.86	3.95	63.97	79.75	64.7	79.9
Mean Corpuscular Hemoglobin Cc (g/dL)	M	39	32.88	0.55	31.78	33.98	31.9	34.6
	F	39	32.76	0.89	30.98	34.53	30.7	34.8
Mean Corpuscular Hemoglobin (pg)	M	39	21.45	0.68	20.10	22.80	20.5	22.9
	F	39	21.05	0.88	19.30	22.80	19.6	23.0
Mean Corpuscular Volume (fL)	M	39	65.26	2.09	61.09	69.44	61.6	70.1
	F	39	64.29	2.86	58.56	70.01	58.4	69.6
Monocytes (10 ³ /uL)	M	39	0.191	0.107	0.000	0.404	0.05	0.49
	F	39	0.201	0.132	0.000	0.464	0.04	0.70
Monocytes Percent (%)	M	10	2.14	1.03	0.07	4.21	0.7	3.9
	F	10	3.32	1.28	0.75	5.89	1.6	5.6
Neutrophils (10 ³ /uL)	M	39	1.441	0.690	0.061	2.821	0.60	3.47
	F	39	1.349	0.709	0.000	2.767	0.43	4.33
Neutrophils Percent (%)	M	10	14.92	2.44	10.03	19.81	11.2	18.8
	F	10	17.49	3.64	10.20	24.78	11.1	24.3

Platelet Count (10 ³ /uL)	M	39	310.2	70.4	169.4	451.0	172	522
	F	39	399.9	116.0	168.0	631.8	174	662
Red Blood Cell Count (10 ⁶ /uL)	M	39	6.396	0.590	5.215	7.576	5.18	7.38
	F	39	6.289	0.628	5.033	7.545	5.10	7.66
Red Blood Cell Distribution Width (%)	M	39	12.89	0.70	11.49	14.29	11.7	14.7
	F	39	12.32	0.89	10.55	14.10	11.2	15.0
Reticulocytes (10 ⁹ /L)	M	39	118.24	34.56	49.12	187.35	74.4	197.3
	F	39	109.72	59.80	0.00	229.32	25.0	284.9
Reticulocytes Percent (%)	M	10	2.18	0.43	1.32	3.04	1.5	2.7
	F	10	1.76	0.54	0.69	2.83	1.0	2.5
White Blood Cell Count (10 ³ /uL)	M	39	7.103	1.767	3.569	10.636	3.98	13.68
	F	39	6.767	1.715	3.337	10.196	3.35	10.63

Animal Model Evaluation Program

Selecting the appropriate animal model is critical to the success of your research. The Animal Model Evaluation Program was developed to allow researchers in any phase of research to assess the quality and compatibility of our models before making a commitment.

Common Applications

- Assessing models in research protocols
- Conducting fine-tune pilot studies
- Exploring opportunities to switch models
- Refining or validate current studies
- Taking your research in a different direction

No Cost: Select the model you would like to evaluate, and we will provide them to you at no cost.

Risk Reduction: Determine whether a model fits your research protocols before making a significant time and financial investment.

Assess Quality: Assess the quality of our research animal models on your own terms.

Support: Gain access to our industry-leading customer support network.

How to Take Advantage of the Model Evaluation Program

Explore our [Animal Model Evaluation Program](#) and find out if the NZW rabbit is a fit for your research.

Research Applications and References

Pharmacology

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