

Wistar Han IGS Rats

NOMENCLATURE: Crl:WI(Han)



Strain Origin

Rederived by GlaxoWellcome from Han Wistar stock supplied by BRL. Transferred to Charles River UK in 1996. Transferred to Charles River in 1997. Caesarean-rederived into isolator-maintained foundation colony. IGS refers to animals bred using the Charles River International Genetic Standardization system.

Coat Color: White (Albino)

Produced: North America, Europe and Japan

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Genetic Management of the Wistar Han IGS Rat Colony

Charles River uses our International Genetic Standard (IGS) program to manage production of the Wistar Han rat. The IGS program is a management system that minimizes inbreeding and manages random genetic drift that would otherwise lead to colony divergence among colonies bred in different locations worldwide. The IGS program is validated by direct genetic analysis of animals from the foundation colony and the barrier rooms. For the Wistar Han, two such analyses have been carried out on animals from the production colony in Raleigh, NC (2007) and the Wilmington, MA, foundation colony (2007 and 2010). Across both colonies for the 110 microsatellite loci tested, average heterozygosity was not significantly different between testing periods or populations (range of 27.1% to 29.5% with most loci showing two or three alleles). These data indicate that the IGS program is working to maintain genetic variation in the Wistar Han, so that animals from any location will not be significantly divergent from one another. Future testing for this and other IGS program colonies will be performed every three years for the foundation colony and every five years for each production colony. For further information regarding Charles River's IGS program, please refer to the IGS technical sheet found at www.criver.com/info/rm.

Charles River Wistar Han IGS Data

We understand that knowing certain baseline parameters on your research model colonies is vital to achieving valid and reproducible research results. To help ensure that we are providing the exact research models that you need, we conduct routine health surveillance on our animal colonies for an extensive list of infectious agents, in addition to maintaining clinical and toxicological data for those models.

Clinical Chemistry

Crl:WI(Han)*		CHOL (mg/dl)	TRIG (mg/dl)	ALT (U/l)	AST (U)	ALK (u/l)	TBIL (mg/dl)
Male	Mean	94.63	276.52	113.86	204.89	370.22	0.29
	S.D.	13.15	97.16	160.58	202.74	74.65	0.08
	n	230	230	230	229	230	230
Female	Mean	101.34	141.20	86.54	245.79	219.07	0.28
	S.D.	15.85	45.16	86.46	215.12	60.46	0.11
	n	223	223	223	222	223	223

Crl:WI(Han)*		GLU (mg/dl)	PHOS (mg/dl)	TP (g/dl)	Ca (mg/dl)	BUN (mg/dl)	CRE (mg/dl)
Male	Mean	307.68	12.26	6.61	12.04	13.27	0.49
	S.D.	77.45	1.84	0.54	1.16	4.72	0.08
	n	230	230	230	230	230	230
Female	Mean	280.88	10.55	6.91	11.15	12.09	0.47
	S.D.	76.14	2.33	0.50	1.21	4.23	0.09
	n	223	222	223	223	223	223

Crl:WI(Han)*		ALB (g/dl)	Na (meq/l)	K ⁺ (meq/l)	Cl (meq/l)
Male	Mean	3.53	144.86	8.75	101.32
	S.D.	0.27	5.52	1.30	6.08
	n	230	228	228	228
Female	Mean	3.88	143.97	8.33	101.51
	S.D.	0.37	6.07	1.13	3.92
	n	223	212	212	211

*North American colonies only/Non-fasted values

*Potassium values are artifactually elevated as a consequence of CO₂ euthanasia

Age: 56 - 70 days

Diet: Purina CRL (5L79) rodent chow

Temperature: 68 - 72°F

Humidity: 40 - 60%

Cage Density: 18.6 in²/rat

Screening Period: January to December 2009

Euthanasia: CO₂

Bleed Route: Cardiac puncture after euthanasia

Analyzing Equipment: Alfa Wassermann Ace Alera

Hematology

Crl:WI(Han)*		WBC	NEUT	LYMPH	MONO	EOS	BASO	NEUT
		(K/ μ l)	(K/ μ l)	(K/ μ l)	(K/ μ l)	(K/ μ l)	(K/ μ l)	(%)
Male	Mean	6.84	2.05	4.14	0.52	0.10	0.03	29.92
	S.D.	2.59	0.81	1.67	0.25	0.09	0.04	6.32
	n	121	121	121	121	121	121	121
Female	Mean	6.19	1.78	3.78	0.50	0.10	0.02	28.58
	S.D.	2.68	0.83	1.72	0.25	0.11	0.04	5.83
	n	116	116	116	116	116	116	116

Crl:WI(Han)*		LYMPH	MONO	EOS	BASO	RBC	HGB	HCT
		(%)	(%)	(%)	(%)	(M/ μ l)	(g/dl)	(%)
Male	Mean	60.85	7.52	1.33	0.38	8.19	17.49	55.81
	S.D.	7.14	1.90	1.12	0.44	0.96	2.23	6.42
	n	121	121	121	121	121	121	121
Female	Mean	61.60	8.03	1.45	0.34	7.94	16.55	53.40
	S.D.	6.71	2.22	1.37	0.44	0.95	2.52	6.69
	n	116	116	116	116	116	116	116

Crl:WI(Han)*		MCV	MCH	MCHC	RDW	PLT	MPV
		(fL)	(pg)	(g/dl)	(%)	(K/ μ l)	(fL)
Male	Mean	68.22	21.37	31.33	15.78	1176.19	7.72
	S.D.	3.36	1.43	1.64	2.97	280.26	0.84
	n	121	121	121	121	121	121
Female	Mean	67.30	20.82	30.96	14.11	1113.91	7.35
	S.D.	3.30	1.73	2.35	1.94	245.83	0.82
	n	116	116	116	116	116	116

*North American colonies only/non-fasted values

Age: 56 - 70 days

Diet: Purina CRL (5L79) rodent chow

Temperature: 68 - 72°F

Humidity: 40 - 60%

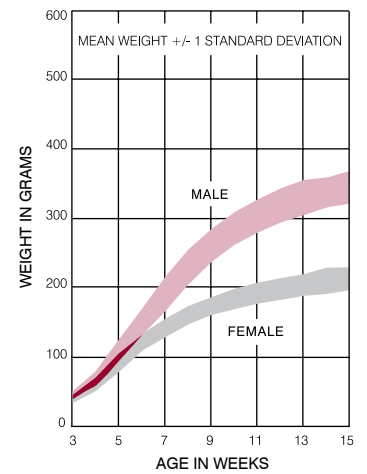
Cage Density: 18.6 in²/rat

Screening Period: January to December 2009

Euthanasia: CO₂

Bleed Route: Cardiac puncture after euthanasia

Analyzing Equipment: Drew Scientific HemaVet



Charles River Technical Data (Available online at www.criver.com)

2011: Neoplastic and Non-Neoplastic Lesions in the Charles River Wistar Hannover [CRL:WI(Han)] Rat

2009: Reproductive Parameters and Fetal Data from Reproductive Toxicity Studies in the Charles River Wistar Hannover [CRL:WI(Han)]

2008: Clinical Laboratory Parameters for Crl:WI(Han)

2003: Spontaneous Neoplasms and Survival in Wistar Han Rats: Compilation of Control Group Data

Research Applications and References

The Wistar Han IGS rat is a multipurpose model that can be used in such fields as toxicology (safety and efficacy testing), aging and oncology.

General Purpose

- Bartkowski, D.M. *et al.* Comparison between Sprague-Dawley and Wistar-Han rat *in-vivo* pharmacokinetics and *in-vitro* metabolic stability with selected compounds. *AAPS Journal*, **11** (2009).
- Sampaio-Maia, B., Serrão, P., Vieira-Coelho, M. A. & Pestana, M. Differences in the renal dopaminergic system activity between Wistar rats from two suppliers. *Acta Physiologica Scandinavica*, **178**: 83–89 (2003).
- Smyth R. *et al.* Comprehensive characterization of serum clinical chemistry parameters and the identification of urinary superoxide dismutase in a carbon tetrachloride-induced model of hepatic fibrosis in the female Hanover Wistar rat. *International Journal of Experimental Pathology*, **88 (5)**: 361-76 (2007).
- G. Molyneux, S. *et al.* Haemotoxicity of chlorambucil in the Wistar Hanover rat with particular reference to bone marrow culture, marrow cell apoptosis and levels of FLT3 ligand. *Comparative Clinical Pathology*, **13 (2)**, 70-81(2004).
- Giffen, P.S. *et al.* Markers of experimental acute inflammation in the Wistar Han rat with particular reference to haptoglobin and C-reactive protein. *Archives of Toxicology*, **77 (7)**, 392-402 (2003).

Reproductive Toxicology

- Garside, D.A. & Woods, J. An *in vivo* and *in vitro* investigation into the effects of alpha-chlorohydrin on sperm motility and correlation with fertility in the Han Wistar rat. *Reproductive Toxicology*, **10 (3)**: 199-207 (1996).
- Barbeau, S. *et al.* Fertility and embryo-fetal development historical control data in Wistar Han IGS rats. *Birth Defects Research Part A: Clinical Molecular Teratology*, **82 (5)**: 376 (2008).

Carcinogenesis

- Furukawa, S. *et al.* Effects of Juvenile Aging on Hepatocellular Proliferation in Male Han Wistar (GALAS) Rats. *J Toxicol Pathology*, **16**: 81-84 (2003).
- Pohjanvirta, R., Tuomisto, J., Vartiainen, T., & Rozman, K. Han/Wistar rats are exceptionally resistant to TCDD. *Pharmacology & Toxicology*, **60 (2)**: 145-150 (1987).
- Taylor, I., Harling, S.M. & Hooks, W.N. A review of the in-life parameters and tumour data from Han Wistar rat dietary and oral gavage tumorigenicity studies. *Toxicology*, **178 (1)**: 53 (2002).