ICR(CD-1®)

Institute for **C**ancer **R**esearch; **C**aesarean **D**erived-**1**

Origin:
The original colony of Swiss mice in the US started from nine mice brought from Lausanne, Switzerland, in 1926 by Clara Lynch (Lynch, 1969). In 1947, Hauschka established at the Institute for Cancer Research, Philadelphia, the Ha/ICR outbred stock from 'Swiss-Webster' mice obtained from John Landis in Hagerstown, Maryland. In 1959 to Charles River Breeding Laboratories, Wilmington.

- **Hsd:ICR(CD-1®)**
  Harlan Sprague Dawley, Inc., obtained a breeding stock from Charles River Breeding Laboratories.

Characteristics:
The ICR(CD-1®) mouse is a Swiss mouse that is used as a general-purpose stock and in oncological and pharmaceutical research. This is a vigorous outbred stock.

- *Anatomy*

Spontaneous micronucleus frequencies (Salamone *et al*, 1994).

- *Behaviour*

Fairly docile and easy to handle. Study of laterality (use of the right paw) (Biddle *et al*, 1993; 1996). The mean maximally preferred concentrations of ethanol were 17,9% for C57BL/6 and 6,8% for ICR mice. The consumption of ethanol represents a preferred source of calories for the C57BL/6 mouse (McMillen *et al,* 1998).

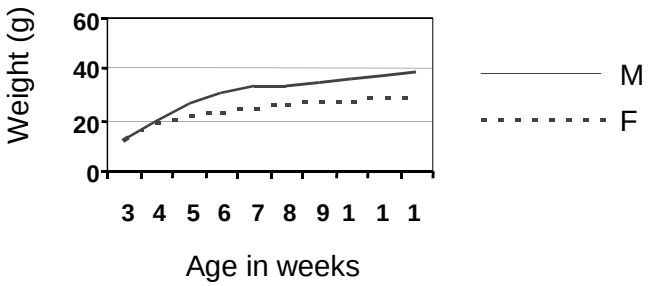
- *Drugs*

Effects of impaired maternal insulin secretion on preimplantation embryo development in mice are marked and consistent after spontaneous ovulation (Mihalik *et al*, 1998). Treatment of ICR with N-Methyl-N-nitrosourea and 17 beta oestradiol might be a model for endometrial carcinoma (Niwa *et al*, 1991). Less sensitive to orally given diethylstilboestrol than B6D2F1 and B6C3F1 mice (Farmakalidis *et al*, 1984). Doses of 100 nmol DMBA produced 24 papillomas per mouse in SENCAR mice and 5.6 papillomas per mouse in ICR mice. Differences in oxidative metabolism of DMBA were not responsible for differences in sensitivity to tumour-initiation between SENCAR and ICR mice (DiGiovanni *et al* (1980).

- *Genetics*

Coat colour genes – *c* : albino
Other genes are variable (outbred stock).
Genetic variance of laboratory outbred Swiss mice has been described by Rice and O'Brien J (1980).

- *Growth Chart* **Hsd:ICR(CD-1®)** – HSD, Inc.



- *Infection*

ICR mice (normal complement) are more sensitive to *Klebsiella pneumoniae* than DBA/2 mice (C5 complement deficient) (Georgieva *et al*, 1998). Pathogenesis of orally induced *Salmonella enteritidis* has been studied by Carter and Collins (1974).

- *Life-span and Spontaneous Disease*

Tumour incidence described by Percy and Jonas (1971), Sher (1974) and Homburger *et al* (1975). Mutations, diseases and mortality have been described by Eaton *et al* (1980). Spontaneous ovarian teratomas have been described by Abbott *et al* (1983). ICR mice have been found to be highly susceptible to induced degenerative joint disease (Silberman, 1976). Age-related changes in the mandibular joint have been described by Silberman and Livne (1979).

- *Miscellaneous*

The ICR mouse has been described by Hausckka and Mirand (1973). Effects of restraint, cage transportation, anaesthesia and repeated bleeding on plasma glucose levels have been described by Tabata *et al* (1997).

- *Nutrition*

In ICR mice maintained by Caloric Restriction at 90, 80 and 70% of their adult Ad Libitum body weight for 21 weeks, oestrous cyclicity was not affected by the mildest amount of Caloric Restriction, while cyclicity was affected in the more severe Caloric Restriction groups. All of the Caloric Restriction females had dose-related decreases in various fertility parameters while on Caloric Restriction (Chapin *et al*., 1993).

- *Physiology and Biochemistry*

Effects of anaesthesia on hepatic and lymphoid tissue have been described by Thompson *et al* (2002). AApoAII amyloid deposition has been described by Gruys *et al*, 1995).

Parameters:

Hsd:ICR(CD-1®) – Harlan France

Parameter	Unit	6 weeks old male			12 weeks old male			6 weeks old female			12 weeks old female		
		mean	±	Sd	mean	±	sd	mean	±	sd	mean	±	sd
Weights													
Body weight	g	30.5	±	2.6	41.4	±	3.4	26.5	±	1.5	33.3	±	2.3
Heart	g	0.175	±	0.023	0.225	±	0.038	0.153	±	0.024	0.171	±	0.024
Lungs	g	0.177	±	0.016	0.207	±	0.020	0.167	±	0.021	0.195	±	0.017
Liver	g	1.878	±	0.248	2.235	±	0.353	1.213	±	0.108	1.513	±	0.247
Kidney	g	0.441	±	0.062	0.566	±	0.087	0.280	±	0.023	0.360	±	0.039
Haematology													
Erythrocytes	$*10^{12}$/l	7.58	±	0.31	8.17	±	0.47	8.20	±	0.27	8.37	±	0.38
Thrombocytes	$*10^{9}$/l	1089	±	142	515	±	93	936	±	225	899	±	120
Leukocytes	$*10^{9}$/l	6.1	±	1.3	6.7	±	2.3	4.2	±	0.9	5.4	±	1.2
Lymphocytes	%	79.1	±	5.8	65.6	±	14.7	75.4	±	5.1	77.0	±	5.3
Neutrophiles	%	9.3	±	2.9	30.2	±	13.5	13.1	±	4.3	11.9	±	3.5
Monocytes	%	8.7	±	5.3	3.4	±	2.5	6.5	±	2.7	5.5	±	3.1
Eosinophiles	%	3.1	±	2.2	0.7	±	0.9	5.1	±	2.3	5.0	±	2.4
Basophiles	%	0.0	±	0.0	0.1	±	0.3	0.0	±	0.0	0.0	±	0.0
Biochemistry													
Sodium	mmol/l	151	±	2	151	±	6	154	±	2	150	±	8
Potassium	mmol/l	4.1	±	0.2	4.1	±	0.4	3.8	±	0.2	3.7	±	0.4
Calcium	mmol/l	2.52	±	0.04	2.40	±	0.09	2.47	±	0.03	2.45	±	0.06
Phosphate	mmol/l	2.16	±	0.27	1.95	±	0.35	2.48	±	0.15	2.03	±	0.24
Urea	mmol/l	7.8	±	0.8	8.7	±	0.9	7.1	±	1.6	6.9	±	1.3
Creatinine	µmol/l	27	±	2	30	±	3	30	±	2	29	±	1
Bilirubine	µmol/l	<10			<10			<10			<10		
Cholesterol	mmol/l	3.7	±	0.8	3.4	±	0.6	2.8	±	0.5	2.9	±	0.6
Triglyceride	mmol/l	1.46	±	0.42	1.97	±	0.40	1.07	±	0.25	1.29	±	0.59
Glucose	mmol/l	10.8	±	1.1	9.8	±	1.0	8.6	±	0.8	9.0	±	1.3
AP	U/l	139	±	33	33	±	8	144	±	31	79	±	22
ASAT	U/l	71	±	13	64	±	16	78	±	16	76	±	12
ALAT	U/l	36	±	6	41	±	9	34	±	8	33	±	6
LD	U/l	486	±	134	583	±	281	658	±	93	583	±	152
Hemoglobin	mmol/l	8.0	±	0.4	8.2	±	0.5	8.5	±	0.2	8.5	±	0.5
Hematocrite	l/l	0.44	±	0.02	0.45	±	0.03	0.44	±	0.02	0.46	±	0.03

Full brochure with background data available on request.

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