



B6C3F1 (C57BL/6 x C3H)F1

Origin

B6C3F1/OlaHsd

This F1 hybrid is a cross between C57BL/6JOLAhsd females and C3H/HeNHsd males.

B6C3F1/Hsd

This F1 hybrid is a cross between C57BL/6NHsd females and C3H/HeNHsd males.

Research application

Toxicology, carcinogenic studies, embryo donors in transgenic research.

Characteristics

The F1 hybrid of two inbred strains can be a useful animal for many purposes. It is genetically uniform and heterozygous for all the genes for which the two parental strains differ. F1 animals are easy to produce (hybrid vigour) and are less susceptible to environmental influences than the parent inbred strain. F1 mice will accept transplants of tissues from mice of either parental strain.

Carcinogens

The neonatal B6C3F1 mouse tumorigenicity bioassay is highly sensitive to direct-acting genotoxic carcinogens, with the liver being the principal target organ. (Flammang *et al*, 1997; Fu *et al*, 1997; Fu *et al*, 1998).

Genetics

Coat color genes - a/A, B/B, C/C, D/D : agouti.

Histocompatibility - H-2^{b/k}.

The B6C3F1 will be heterozygous for all the loci where the C57BL/6 and C3H differ and homozygous for all the loci where both parental strains are the same.

Life-span and spontaneous disease

Neoplastic and nonneoplastic lesions in ageing B6C3F1 mice have been described by Ward *et al* (1979). Urinary calculi in the bladder of a male mouse have been described by Wojcinski *et al* (1992). The mean life-span of offspring from reciprocal crosses between C3H/HeJ mice with Mammary Tumor Virus and C57BL/6J have been described by Storer (1966).

Mean life-span of C3B6F1 females is 13,8 months and of C3B6F1 males is 26.3 months, whereas the mean life-span of B6C3F1 females is 27.8 months and of B6C3F1 males is 30.9 months (Storer, 1966).

Mean life-span of B6C3F1 females is 29.9 months and of B6C3F1 males is 30.9 months (Meyers, 1978). Survival and growth patterns have been described by Cameron *et al* (1985). Spontaneous neoplasms have been described by Chandra and Frith (1992). A cellular oncogene was found in spontaneous liver tumors (Fox and Watanabe, 1985). Spontaneous vascular endothelial cell tumors in aged B6C3F1 mice have been described by Yamate *et al* (1988). Evaluating body weight markers for individual animals, as opposed to mean values in an experiment of 50 animals has been shown to be effective in predicting the risk of certain chronic diseases (Seilkop, 1995).

Miscellaneous

Effects of restraint, cage transportation, anesthesia and repeated bleeding on plasma glucose levels have been described by Tabata *et al* (1998).

Nutrition

Caloric restriction and resistance to environmental disease have been described by Frame *et al* (1998).

Physiology and biochemistry

Exposure to electromagnetic fields of 902 MHz and 1747 MHz does not cause a measurable increase in rectal body temperature or in the corticosterone level of B6C3F1 mice secured in fixation tubes (Kamlage, 2002).

References

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