ENVIGO

Research Models and Services

Inbred Mice

C57BL/Ka

Origin

Developed in 1921 by Little from brother - sister pair (57 x 52) of Miss Abby Lathrop's stock. Strains C57BL/6 and C57BL/10 separated prior to 1937. In 1947 from Strong, Cold Spring Harbor, NY, to Kaplan, Stanford, CA, USA, to Law, National Cancer Institute, Bethesda, MD, USA.

C57BL/KaLwRijHsd

In 1965 from Law, National Cancer Institute, Bethesda, MD, USA, to Radiobiological Institute TNO, Rijswijk, The Netherlands. In 1994, to Harlan Laboratories through acquisition of ITRI-TNO, Rijswijk. Harlan was renamed Envigo in 2015.

Characteristics

The C57BL is easily the most widely used strain. The C57BL/6 is widely used as the 'standard' inbred strain and has been used as the genetic background for a wide range of mutants. The C57BL/10 has been used as the inbred partner for a large number of congenic resistant strains.

Animal model

C57BL/KaLwRijHsd is an animal model for the human idiopathic paraproteinaemia. (Radl *et al*, 1978; Radl, 1981; Radl, 1994), and for multiple myeloma (Radl *et al*, 1985; Radl *et al*, 1988; Asosingh *et al*, 2000).

Anatomy

Occasionally, black spots have been seen on the spleens of some mice, due to clusters of melanocytes (Weissman, 1967).

Genetics

Coat color genes	- *a, B, C, D* : black.
Histocompatibility	- *H-2^{b}, Thy-1^{b}*.
Biochemical markers	- *Es-1^{a}, Es-2^{b}, Es-3^{a}, Es-5^{b}, Gpi-1^{b}, Hbb^{s}, Idh-1^{a}, Ldr-1^{a}, Mpi-1^{a}, Mup-1^{b}, Pgm-1^{a}, Trf^{b}*.

Life-span and spontaneous disease

Median life-span 27.6 months for C57BL/Ka males and 24.1 months for C57BL/Ka females. (Unpublished data). Main neoplastic lesions in males include reticulum cell sarcoma type B (29%), testes interstitial tumor (13%), thyroid follicular adenoma (9%), unclassified lymphoreticular tumors (9%). The main neoplastic lesions in females include reticulum cell sarcoma type B (23 %), histiocytic sarcoma (18 %), unclassifiable lymphoma (16 %), thyroid follicular adenoma (2 %). Non-neoplastic lesions include amyloidosis (Males 83%, females 73%), periarteritis nodosa (often mimicking the clinical signs of otitis media) (males 16%, females 36%), mesenteric disease (males 10%, females 18), hydronephrosis (males 6%, females 9%), focal liquefactive necrosis in the brain (males 2%, females 12%). (Zurcher *et al*., 1982). About 50% of mice develop homogeneous immunoglobulins resembling idiopathic paraproteinaemia in man by 24 months (Radl and Hollander, 1974). Lymphocytic H-2-specific antibodies were found in sera from about 25 percent of aged mice (Ivanyi *et al*, 1982). Median life-span 21.5 months in C57BL/Lac males and 19.3 months in C57BL/Lac females (Festing and Blackmore, 1971). Median life-span 20.8 months in C57BL/He males and 20.0 months in C57BL/M females (Heston *et al*, 1972). Median life-span 27.0 months in C57BL/Icr males and 25.4 months in C57BL/Icr females (Rowlatt *et al*, 1972)

Miscellaneous

High degree of genetic distinctiveness (Taylor, 1972). In the C57BL/Ka mouse grows the 5T2 MM multiple myeloma. The paraprotein produced by the 5T2 MM clone is an IgG2^{a}-kappa immunoglobulin (Radl *et al*, 1985).

Reproduction

Good breeding performance, litter size 5.5, productivity .78 young/female/week

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