WILD TYPE

GENETICALLY ENGINEERED MODELS (GEM)

NATURAL IMMUNO-DEFICIENT

NATURAL MUTANTS

RAT
Inbred

Fischer (F344) Rat

Strain name: F344/HanZtmRj

Type: Inbred rat

Origin: Zentralinstitut für Versuchstierzucht (Hannover) - 2013

Colour and related genotype: Albino rat - Tyr^c/Tyr^c

Breeding: Easy to rear

Presentation of the model

This strain, the F344, was established in 1920 by Curtis and Dunning at the Institute of Cancer Research at Columbia University. It was later acquired by a breeder, FISCHER, and subsequently transferred to Heston in 1949 and to the NIH in 1951.

Unlike other substrains, this line does not exhibit deficient dipeptidyl peptidase IV activity. The estimated lifespan is 31 months for males and 29 months for females, with 87% of animals from both sexes living beyond 24 months under specific environmental conditions (Sass et al., 1975). Aged animals show peripheral retinal degeneration, which is exacerbated by exposure to moderate-intensity fluorescent light (344 lux). They also develop cardiomyopathy (myocardial degeneration with interstitial fibrosis) and nephropathy (Lai et al., 1979). Retinal degeneration is significantly accelerated in males after 12 months of age (Diloreto et al., 1994; see also Faktorovich et al., 1992). Lifespan can be extended through dietary restriction regimens (Yu et al., 1982 and 1985).

Fischer rats are prone to various types of tumors, including mammary tumors (41% in females), pituitary adenomas (36% in females and 24% in males), and testicular tumors (85% in males) (Sass et al., 1975).

Reproductive data*	
Monogamous mating	
Litter size at birth	7.4
Weaning %	97
Productivity index	1.27
Sterility %	2
Gestation time	Between 20 and 23 days

* JANVIER LABS 2015 provisional Data, for an indicative basis

Main application and research fields

ONCOLOGY

TOXICOLOGY

AGEING

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