

Resource Summary Report

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Retinal Degeneration Rat Model Resource

RRID:SCR_003311

Type: Tool

Proper Citation

Retinal Degeneration Rat Model Resource (RRID:SCR_003311)

Resource Information

URL: <http://ucsfeye.net/mlavailRDratmodels.shtml>

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Description: Supplier of fully penetrant rat models of the retinitis pigmentosa type of inherited retinal degeneration, including the following models: * Mutant rhodopsin transgenic rats ** P23H mutant rhodopsin transgenic rats -Three lines with different rates of photoreceptor degeneration ** S334ter mutant rhodopsin transgenic rats -Five lines with different rates of photoreceptor degeneration * RCS (Royal College of Surgeons) rats with inherited retinal dystrophy ** RCS pink-eyed inbred strain ** RCS pigmented congenic strain with slowed rate of retinal dystrophy ** RCS congenic control strains of both pigmentation types, wild-type at the retinal dystrophy (Mertk) genetic locus The resource has been supported by the National Eye Institute (NEI) for the past 19 years to produce and distribute breeding pairs of these animal models to vision scientists. Thus, the following apply: * Request for rats requires only a 1-page letter/e-mail addressing 4 questions * No charge for the animals or tissues (except for shipping costs) * No Material Transfer Agreement (MTA) required * No collaboration requirement (in most cases) The resource usually provides multiple breeding pairs of the rats to vision scientists to generate breeding stock. It can also provide extra animals to breed for immediate experimental work, animals of specific ages (depending upon availability), animals with prior exposure to different lighting conditions, eyes taken at specific ages instead of rats for pilot studies and other experiments (fresh, frozen, dissected in specific ways, or fixed with special fixatives or by different methods), or other tissues (e.g., liver, spleen, brain, testis, etc.) prepared different ways.

Abbreviations: Retinal Degeneration Rat Model Resource

Synonyms: NEI Retinal Degeneration Rat Model Resource

Resource Type: biomaterial supply resource, organism supplier, material resource

Keywords: mutant rhodopsin transgenic rat, p23h mutant rhodopsin transgenic rat, s334ter mutant rhodopsin transgenic rat, rcs inbred, congenic strain, retinitis pigmentosa,

retinal degeneration, retinal dystrophy, vision, rat, eye, transgenic rat, retina, model organism, mutant rat

Related Condition: Retinitis pigmentosa

Funding: NIH Blueprint for Neuroscience Research ;
NEI

Availability: THIS RESOURCE IS NO LONGER IN SERVICE

Resource Name: Retinal Degeneration Rat Model Resource

Resource ID: SCR_003311

Alternate IDs: nif-0000-00188

Record Creation Time: 20220129T080218+0000

Record Last Update: 20260801T190208+0000

Ratings and Alerts

No rating or validation information has been found for Retinal Degeneration Rat Model Resource.

No alerts have been found for Retinal Degeneration Rat Model Resource.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 23 mentions in open access literature.

Listed below are recent publications. The full list is available at [PRECISE-TBI](#) .

Valiente-Soriano FJ, et al. (2020) Tracing the retina to analyze the integrity and phagocytic capacity of the retinal pigment epithelium. Scientific reports, 10(1), 7273.

Noailles A, et al. (2018) Systemic inflammation induced by lipopolysaccharide aggravates inherited retinal dystrophy. Cell death & disease, 9(3), 350.

Athanasiou D, et al. (2017) Rescue of mutant rhodopsin traffic by metformin-induced AMPK activation accelerates photoreceptor degeneration. Human molecular genetics, 26(2), 305.

Pinilla I, et al. (2016) Long time remodeling during retinal degeneration evaluated by optical coherence tomography, immunocytochemistry and fundus autofluorescence. Experimental eye research, 150, 122.

Noailles A, et al. (2016) Persistent inflammatory state after photoreceptor loss in an animal model of retinal degeneration. *Scientific reports*, 6, 33356.

Shinde V, et al. (2016) Unfolded protein response-induced dysregulation of calcium homeostasis promotes retinal degeneration in rat models of autosomal dominant retinitis pigmentosa. *Cell death & disease*, 7(2), e2085.

Orhan E, et al. (2015) Genotypic and phenotypic characterization of P23H line 1 rat model. *PloS one*, 10(5), e0127319.

Sizova OS, et al. (2014) Modulation of cellular signaling pathways in P23H rhodopsin photoreceptors. *Cellular signalling*, 26(4), 665.

Hiramatsu N, et al. (2014) Translational and posttranslational regulation of XIAP by eIF2 γ and ATF4 promotes ER stress-induced cell death during the unfolded protein response. *Molecular biology of the cell*, 25(9), 1411.

Lax P, et al. (2014) Neuroprotective effects of the cannabinoid agonist HU210 on retinal degeneration. *Experimental eye research*, 120, 175.

Sotoca JV, et al. (2014) Hearing impairment in the P23H-1 retinal degeneration rat model. *Frontiers in neuroscience*, 8, 297.

Shinde VM, et al. (2012) ER stress in retinal degeneration in S334ter Rho rats. *PloS one*, 7(3), e33266.

Fernández-Sánchez L, et al. (2012) Safranal, a saffron constituent, attenuates retinal degeneration in P23H rats. *PloS one*, 7(8), e43074.

Seiler MJ, et al. (2012) Computational molecular phenotyping of retinal sheet transplants to rats with retinal degeneration. *The European journal of neuroscience*, 35(11), 1692.

McGill TJ, et al. (2012) Optomotor and immunohistochemical changes in the juvenile S334ter rat. *Experimental eye research*, 104, 65.

Martinez-Navarrete G, et al. (2011) Retinal degeneration in two lines of transgenic S334ter rats. *Experimental eye research*, 92(3), 227.

Seiler MJ, et al. (2010) Visual restoration and transplant connectivity in degenerate rats implanted with retinal progenitor sheets. *The European journal of neuroscience*, 31(3), 508.

Seiler MJ, et al. (2010) Three-dimensional optical coherence tomography imaging of retinal sheet implants in live rats. *Journal of neuroscience methods*, 188(2), 250.

Pennesi ME, et al. (2008) The relationship of photoreceptor degeneration to retinal vascular development and loss in mutant rhodopsin transgenic and RCS rats. *Experimental eye research*, 87(6), 561.

Seiler MJ, et al. (2008) BDNF-treated retinal progenitor sheets transplanted to degenerate rats: improved restoration of visual function. *Experimental eye research*, 86(1), 92.