

# Alpha-Synuclein A53T SNCA knockin rat



<b>MODEL</b>	Alpha-Synuclein A53T SNCA knockin rat
<b>STRAIN</b>	HsdSage:SD-SNCA <sup>em1(SNCA-A53T)</sup> Sage
<b>LOCATION</b>	U.S.
<b>AVAILABILITY</b>	Live colony

## CHARACTERISTICS/HUSBANDRY

- Background strain: Sprague Dawley

## ZYGOSITY GENOTYPE

- Homozygous

## RESEARCH USE

- Parkinson's disease
- Dopaminergic cell toxicity

## ORIGIN

The Alpha-Synuclein A53T knockin rat model was originally created at SAGE Labs, Inc. in St. Louis, MO. The animal inventory was acquired by Envigo in 2019 and then by Inotiv in 2021. The line continues to be maintained through the original SAGE Labs animal inventory and is distributed out of the Boyertown, PA facility.

## DESCRIPTION

Developed in collaboration with The Michael J. Fox Foundation, this model contains a knockin of the A53T-mutated SNCA gene deeming the rat SNCA gene non-functional. The knockin contains humanized amino acids for the region spanning amino acids 53-122. The resulting model expresses a humanized A53T alpha-synuclein protein without endogenous rat alpha-synuclein. This model was generated using CRISPR/Cas9 genome targeting strategies. The A53T mutation in the SNCA gene has been linked to early-onset Parkinson's disease (PD), making this model useful for understanding alpha-synuclein biology and PD pathogenesis.