

Stk32c Cas9-KO Strategy

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Overview

Target Gene Name

- Stk32c

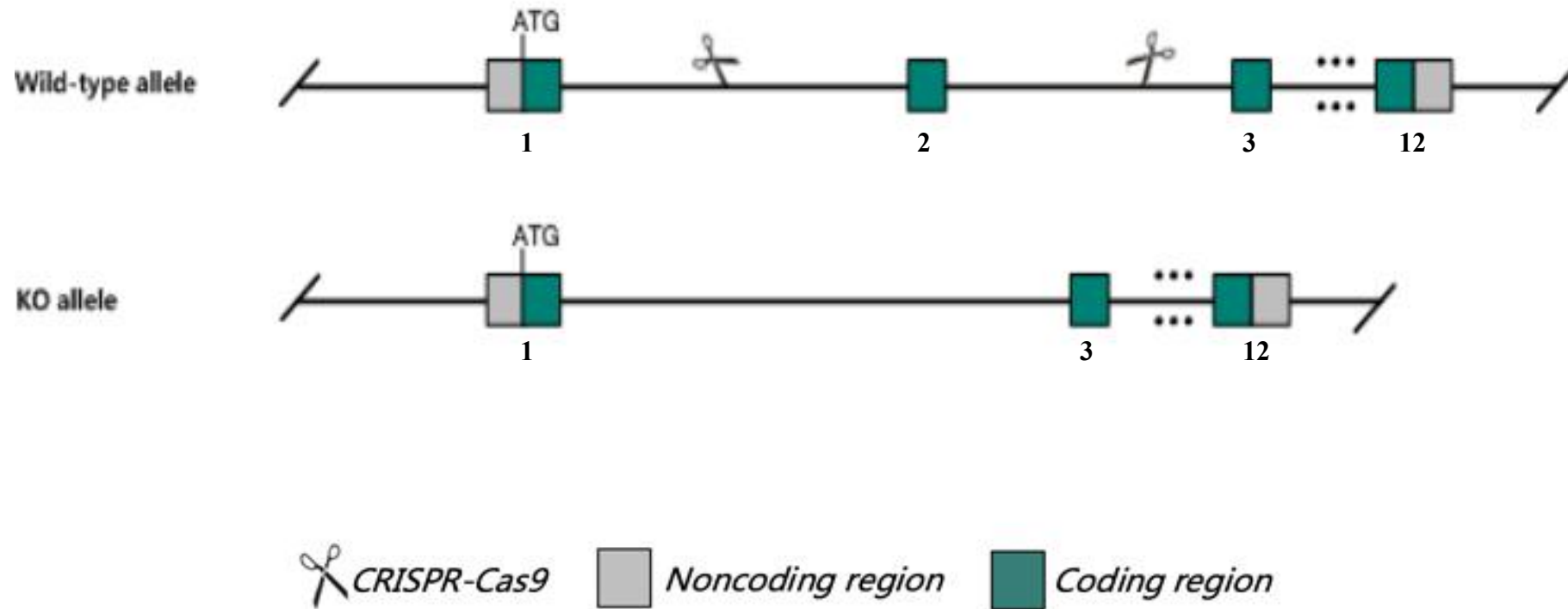
Project Type

- Cas9-KO

Genetic Background

- C57BL/6JGpt

Strain Strategy



Technical Information

- The *Stk32c* gene has 2 transcripts. According to the structure of *Stk32c* gene, exon2 of *Stk32c*-201 (ENSMUST00000016125.12) transcript is recommended as the knockout region. The region contains 56bp coding sequence. Knocking out the region will result in disruption of protein function.
- In this project we use CRISPR-Cas9 technology to modify *Stk32c* gene. The brief process is as follows: gRNAs were transcribed in vitro. Cas9 and gRNAs were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and on-target amplicon sequencing. A stable F1-generation mouse strain was obtained by mating positive F0-generation mice with C57BL/6JGpt mice and confirmation of the desired mutant allele was carried out by PCR and on-target amplicon sequencing.

Gene Information

Stk32c serine/threonine kinase 32C [*Mus musculus* (house mouse)]

Gene ID: 57740, updated on 11-Apr-2024

[Download Datasets](#)

Summary



Official Symbol Stk32c provided by [MGI](#)

Official Full Name serine/threonine kinase 32C provided by [MGI](#)

Primary source [MGI:MGI:2385336](#)

See related [Ensembl:ENSMUSG00000015981](#) [AllianceGenome:MGI:2385336](#)

Gene type protein coding

RefSeq status VALIDATED

Organism [Mus musculus](#)

Lineage Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus

Also known as PKE; Pkek; YANK3

Summary Predicted to enable protein serine/threonine kinase activity. Predicted to be involved in intracellular signal transduction and peptidyl-serine phosphorylation. Predicted to act upstream of or within phosphorylation. Is expressed in brain; gonad; large intestine; metanephros; and skin. Orthologous to human STK32C (serine/threonine kinase 32C). [provided by Alliance of Genome Resources, Apr 2022]

Expression Biased expression in cortex adult (RPKM 32.1), frontal lobe adult (RPKM 29.4) and 14 other tissues [See more](#)

Orthologs [human](#) [all](#)

NEW

Try the new [Gene table](#)

Try the new [Transcript table](#)

Source: <https://www.ncbi.nlm.nih.gov/>

Transcript Information

The gene has 2 transcripts, all transcripts are shown below:

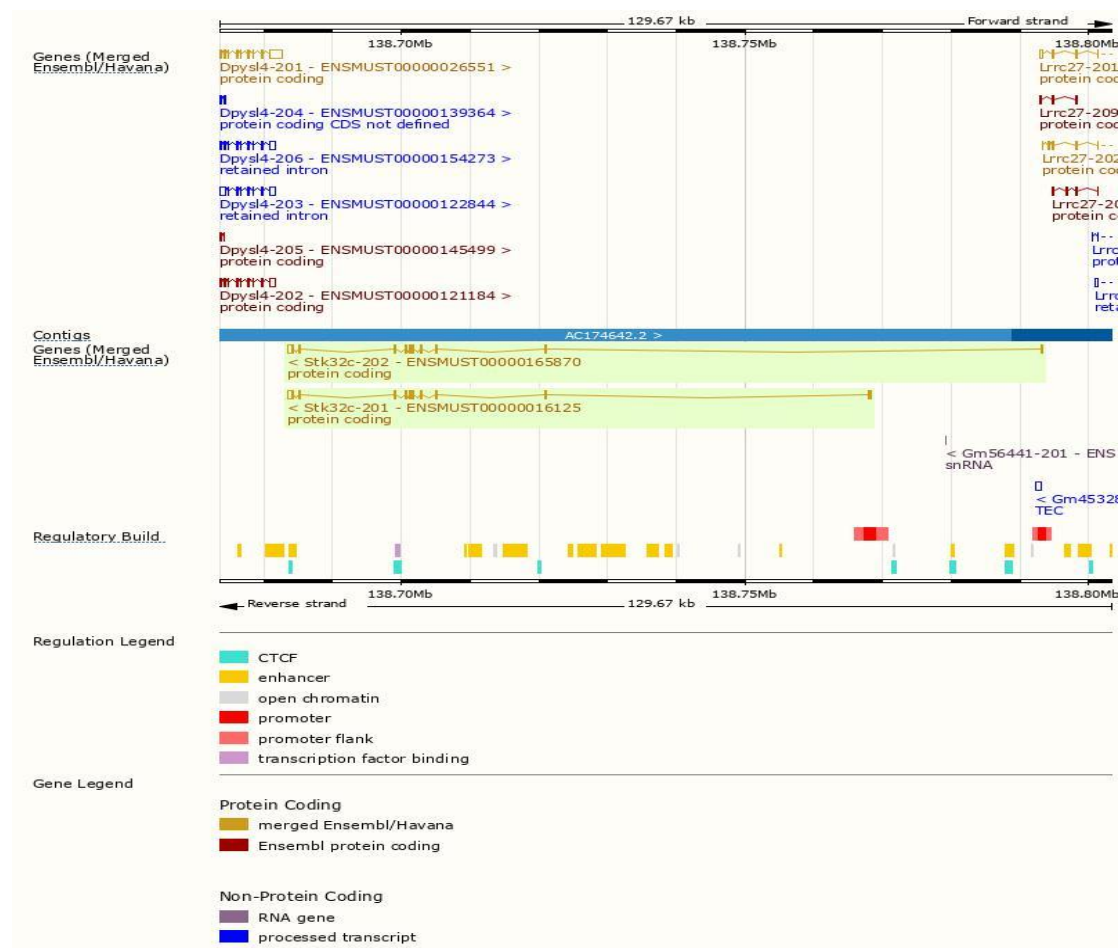
Show/hide columns (1 hidden)							Filter
Transcript ID	Name	bp	Protein	Biotype	CCDS	UniProt Match	Flags
ENSMUST00000165870.2	Stk32c-202	1883	370aa	Protein coding	CCDS52425	E9P XK4	GENCODE basic TSL:5
ENSMUST00000016125.12	Stk32c-201	2206	488aa	Protein coding	CCDS21952	Q8QZV4	Ensembl Canonical GENCODE basic APPRIS P1 TSL:1

The strategy is based on the design of *Stk32c*-201 transcript, the transcription is shown below:



Source: <https://www.ensembl.org>

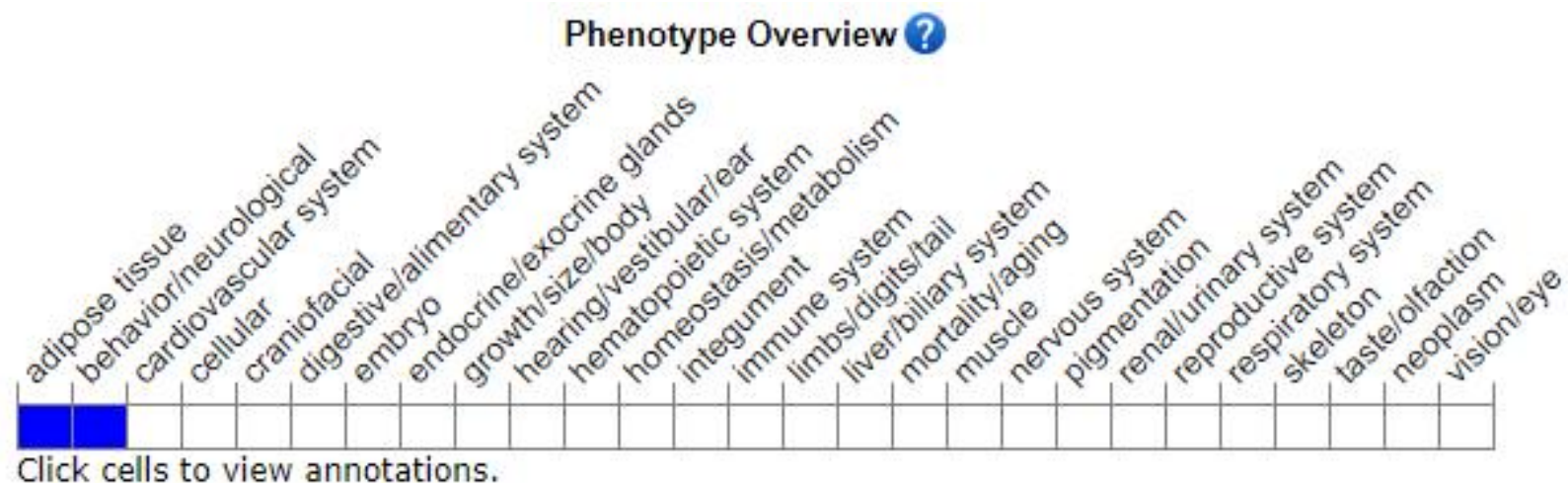
Genomic Information



Protein Information



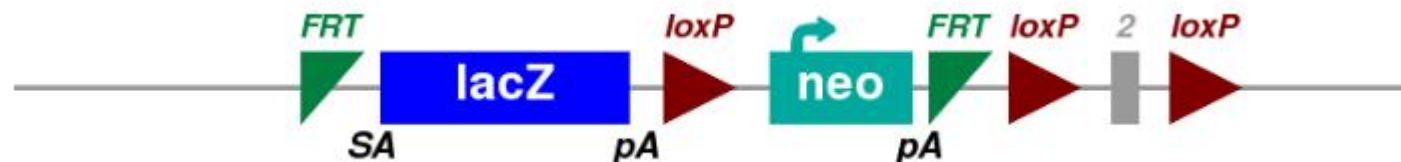
Mouse Phenotype Information (MGI)



Important Information

- This strategy is designed with reference to the existing model, transcript *Stk32c-202* may not be affected.
- *Stk32c* is located on Chr7. If the knockout mice are crossed with other mouse strains to obtain double homozygous mutant offspring, please avoid the situation that the second gene is on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risks of the mutation on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Reference



- ▼ Mutation details: The L1L2_Bact_P cassette was inserted at position 138720709 of Chromosome 7 upstream of the critical exon(s) (Build GRCm39). The cassette is composed of an FRT site followed by lacZ sequence and a loxP site. This first loxP site is followed by a neomycin resistance gene under the control of the human beta-actin promoter, SV40 polyA, a second FRT site and a second loxP site. A third loxP site is inserted downstream of the targeted exon(s) at position 138721470. The critical exon(s) is/are thus flanked by loxP sites. A "conditional ready" (floxed) allele can be created by flp recombinase expression in mice carrying this allele. Subsequent cre expression results in a knockout mouse. If cre expression occurs without flp expression, a reporter knockout mouse will be created. Further information on targeting strategies used for this and other IKMC alleles can be found at http://www.informatics.jax.org/mgihome/nomen/IKMC_schematics.shtml (J:148605, J:173534)

<https://www.informatics.jax.org/allele/MGI:5307108>