

Stk38l Cas9-CKO Strategy

Designer:

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Design Date:

2019-8-8

Project Overview

Project Name

Stk38l

Project type

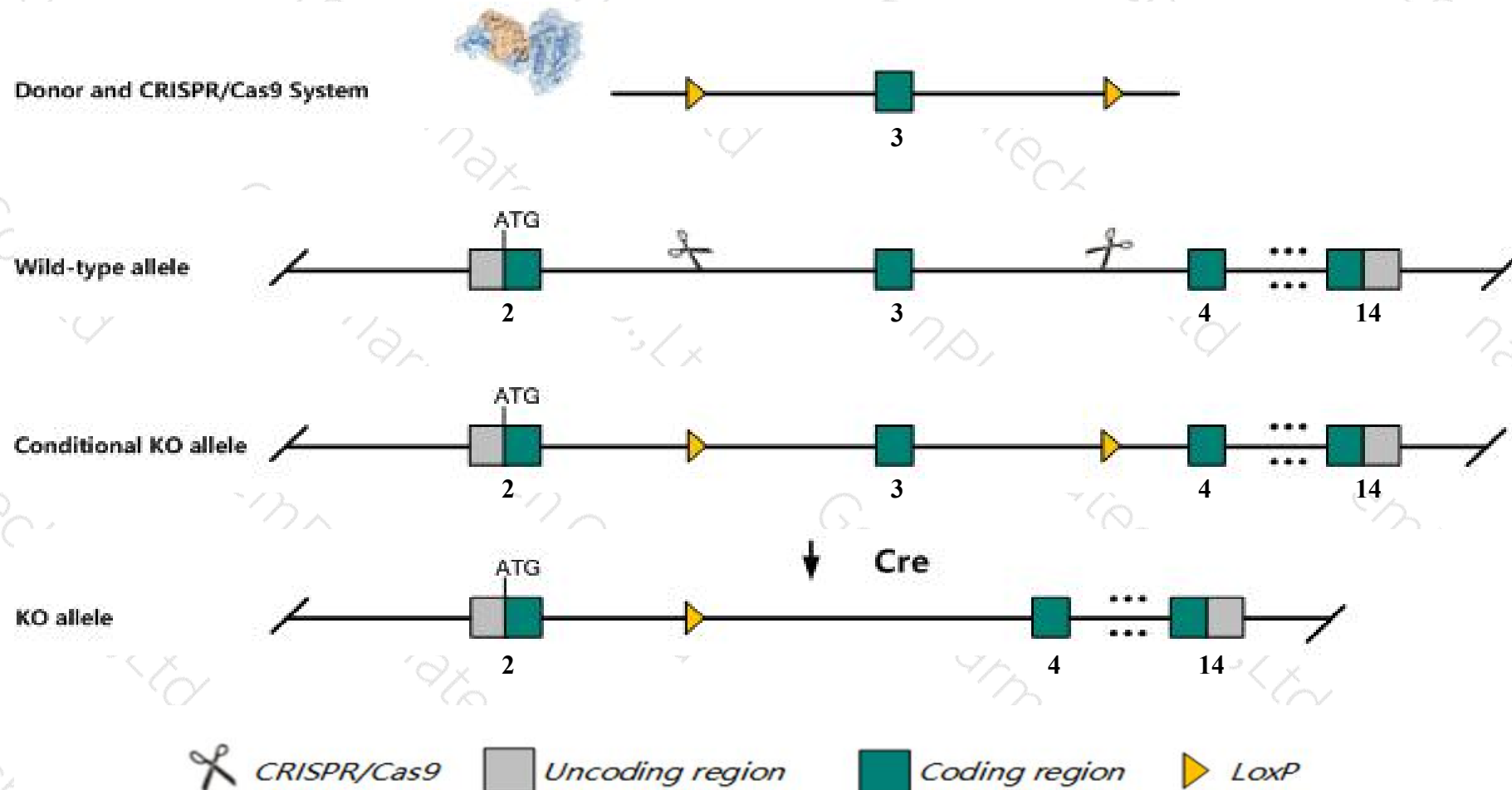
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Stk38l* gene. The schematic diagram is as follows:



Technical routes

- The *Stk38l* gene has 3 transcripts. According to the structure of *Stk38l* gene, exon3 of *Stk38l-201* (ENSMUST00000001675.13) transcript is recommended as the knockout region. The region contains 52bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Stk38l* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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 sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- According to the existing MGI data, Homozygous gene-trapped mice exhibit premature dendritic branching of CA3 pyramidal neurons.
- The *Stk38l* gene is located on the Chr6. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Stk38l serine/threonine kinase 38 like [Mus musculus (house mouse)]

Gene ID: 232533, updated on 31-Jan-2019

Summary



Official Symbol	Stk38l provided by MGI
Official Full Name	serine/threonine kinase 38 like provided by MGI
Primary source	MGI:MGI:1922250
See related	Ensembl:ENSMUSG000000001630
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	4930473A22Rik, Ndr2, Ndr54
Expression	Ubiquitous expression in bladder adult (RPKM 3.6), frontal lobe adult (RPKM 3.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

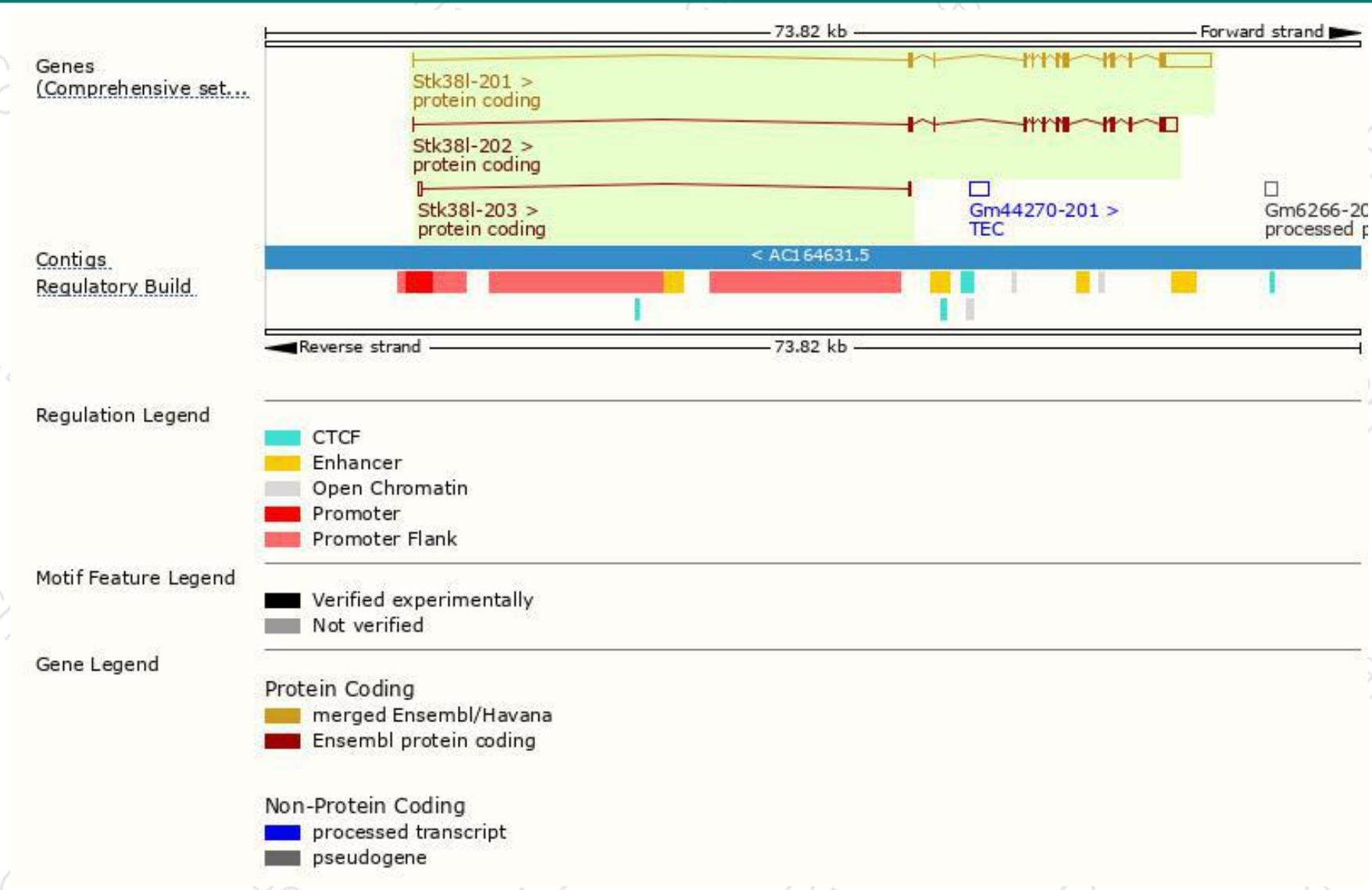
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Stk38l-201	ENSMUST00000001675.13	4550	464aa	Protein coding	CCDS39712	Q7TSE6	TSL:1 GENCODE basic APPRIS P1
Stk38l-202	ENSMUST00000111644.1	2274	471aa	Protein coding	-	Q7TSE6	TSL:5 GENCODE basic
Stk38l-203	ENSMUST00000203318.1	411	30aa	Protein coding	-	A0A0N4SVR1	CDS 3' incomplete TSL:5

The strategy is based on the design of *Stk38l-201* transcript,The transcription is shown below



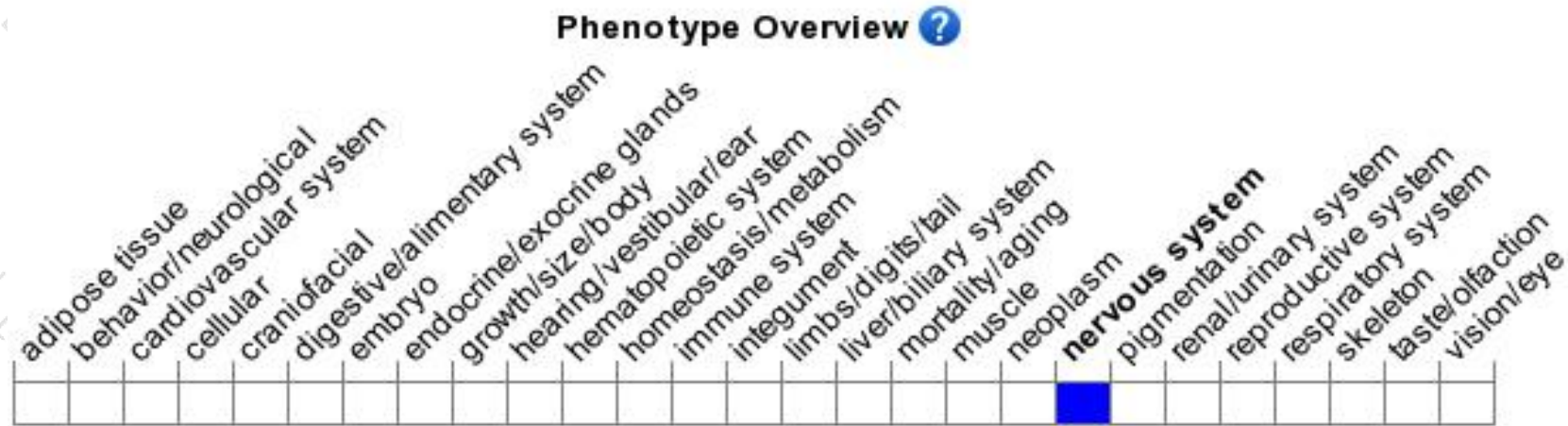
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Homozygous gene-trapped mice exhibit premature dendritic branching of CA3 pyramidal neurons.

If you have any questions, you are welcome to inquire.

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