

Stk31 Cas9-KO Strategy

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Design Date: 2020-3-31

Project Overview

Project Name

Stk31

Project type

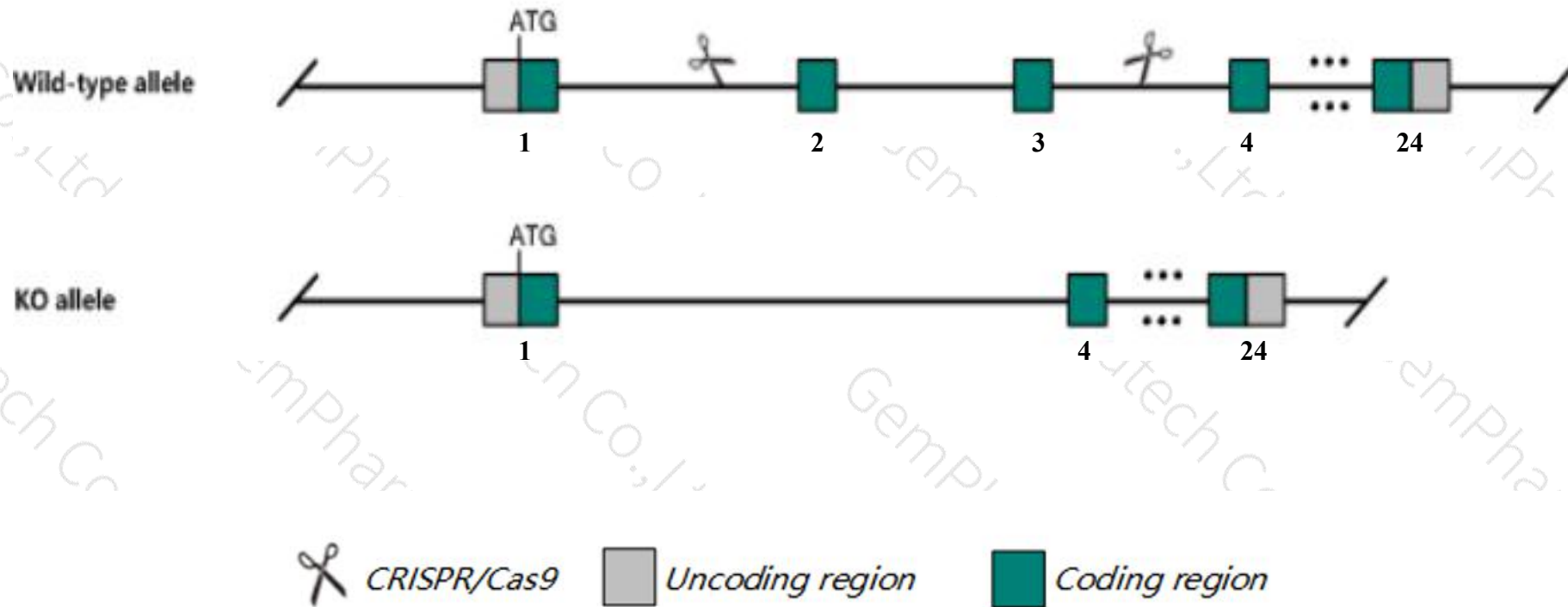
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Stk31* gene. The schematic diagram is as follows:



- The *Stk31* gene has 4 transcripts. According to the structure of *Stk31* gene, exon2-exon3 of *Stk31-201* (ENSMUST00000024171.13) transcript is recommended as the knockout region. The region contains 100bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Stk31* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null mutation display normal embryonic development and spermatogenesis.
- The *Stk31* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Stk31 serine threonine kinase 31 [Mus musculus (house mouse)]

Gene ID: 77485, updated on 13-Mar-2020

Summary



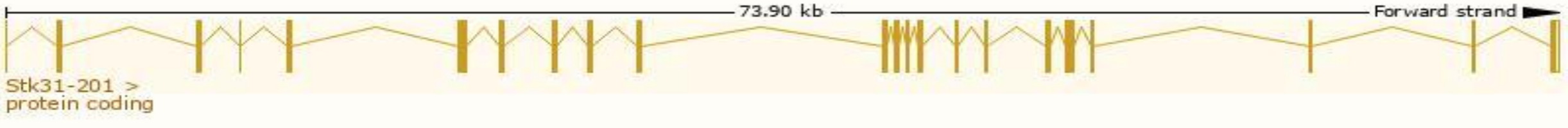
Official Symbol	Stk31 provided by MGI
Official Full Name	serine threonine kinase 31 provided by MGI
Primary source	MGI:MGI:1924735
See related	Ensembl:ENSMUSG00000023403
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C330007K24Rik
Expression	Biased expression in testis adult (RPKM 3.3) and placenta adult (RPKM 1.7) See more
Orthologs	human all

Transcript information (Ensembl)

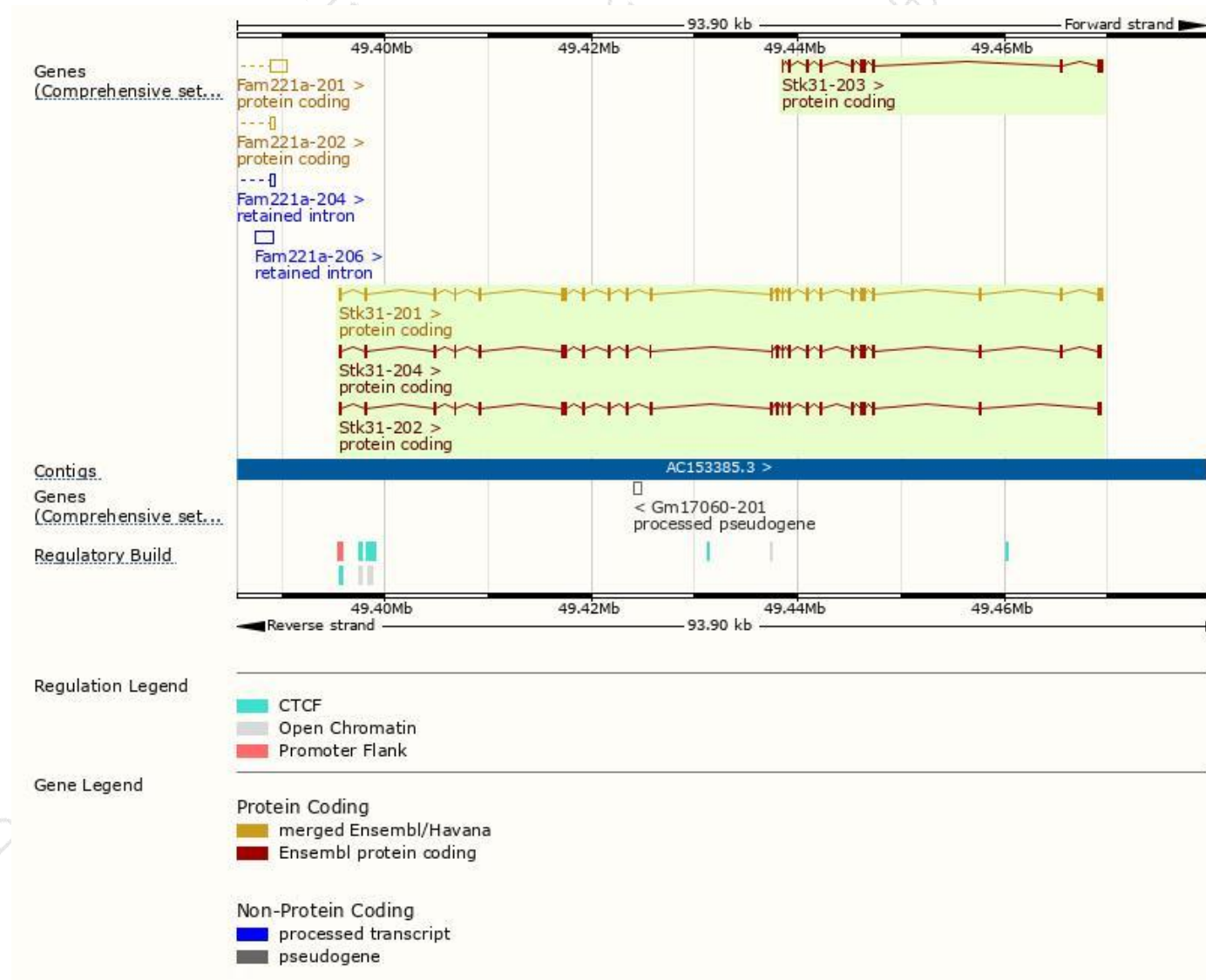
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Stk31-201	ENSMUST00000024171.13	3237	1018aa	Protein coding	CCDS39487	Q99MW1	TSL:1 GENCODE basic APPRIS P2
Stk31-202	ENSMUST00000163954.7	2988	995aa	Protein coding	-	E9Q260	TSL:5 GENCODE basic APPRIS ALT2
Stk31-204	ENSMUST00000172459.7	2922	973aa	Protein coding	-	E9PWQ6	TSL:5 GENCODE basic APPRIS ALT2
Stk31-203	ENSMUST00000167846.1	1251	367aa	Protein coding	-	F6QH34	CDS 5' incomplete TSL:5

The strategy is based on the design of *Stk31-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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