Susd6 Cas9-CKO Strategy

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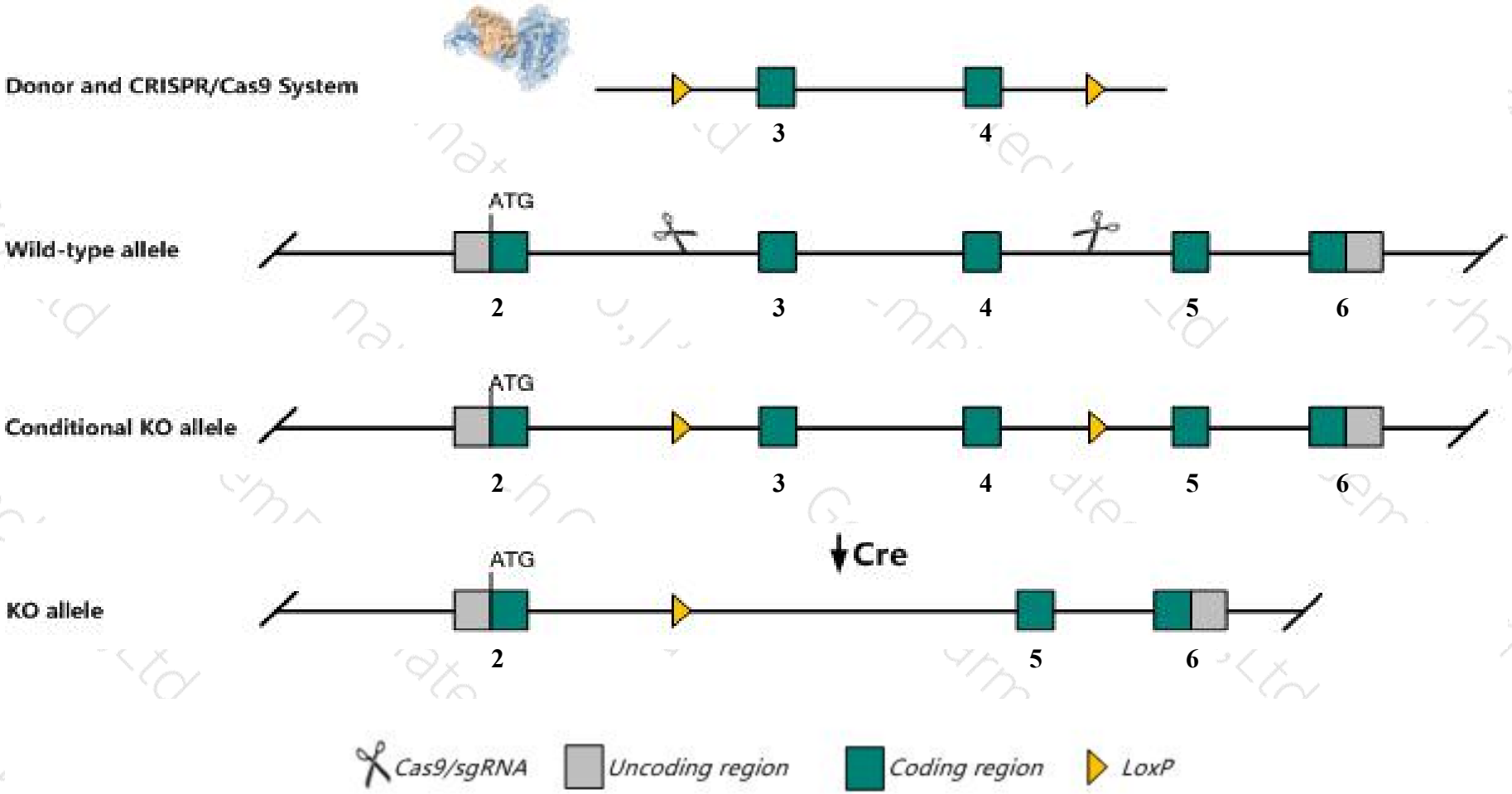
Project Overview

Project Name	***Susd6***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Susd6* gene. The schematic diagram is as follows:



Technical routes

➢ The *Susd6* gene has 3 transcripts. According to the structure of *Susd6* gene, exon3-exon4 of *Susd6-201*(ENSMUST00000068519.6) transcript is recommended as the knockout region.The region contains 334bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Susd6* gene. The brief process is as follows:sgRNA was transcribed in vitro, donor vector was constructed.Cas9, sgRNA 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 was 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.

Notice

➢ According to the existing MGI data,homozygous null mice are viable and fertile and do not show any notable developmental defects nor any increased susceptibility to tumor formation.

➢ The *Susd6* gene is located on the Chr12. 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）

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Susd6 sushi domain containing 6 [Mus musculus (house mouse)]

Gene ID: 217684, updated on 13-Mar-2020

Summary

Official Symbol	Susd6 provided by MGI
Official Full Name	sushi domain containing 6 provided by MGI
Primary source	MGI:MGI:2444661
See related	Ensembl:ENSMUSG00000021133
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	4933426M11Rik, mKIAA0247
Expression	Ubiquitous expression in lung adult (RPKM 33.0), colon adult (RPKM 26.0) and 28 other tissues See more
Orthologs	human all

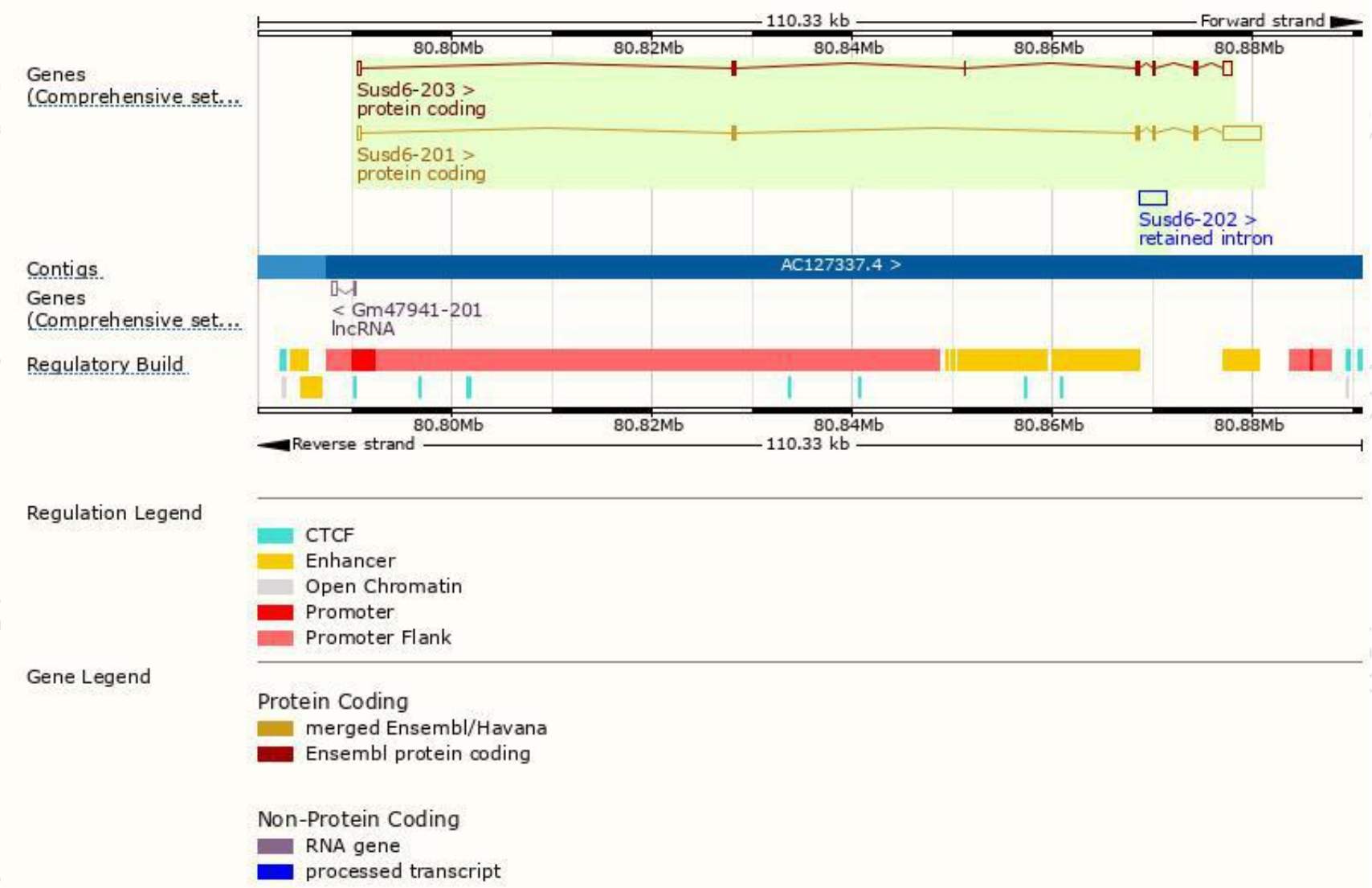
Transcript information（Ensembl）

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Susd6-201	ENSMUST00000068519.6	4977	302aa	Protein coding	CCDS26016	Q8BGE4	TSL:1 GENCODE basic APPRIS P2
Susd6-203	ENSMUST00000220238.1	2127	323aa	Protein coding	-	Q8C0M5	TSL:1 GENCODE basic APPRIS ALT2
Susd6-202	ENSMUST00000219720.1	2662	No protein	Retained intron	-	-	TSL:NA

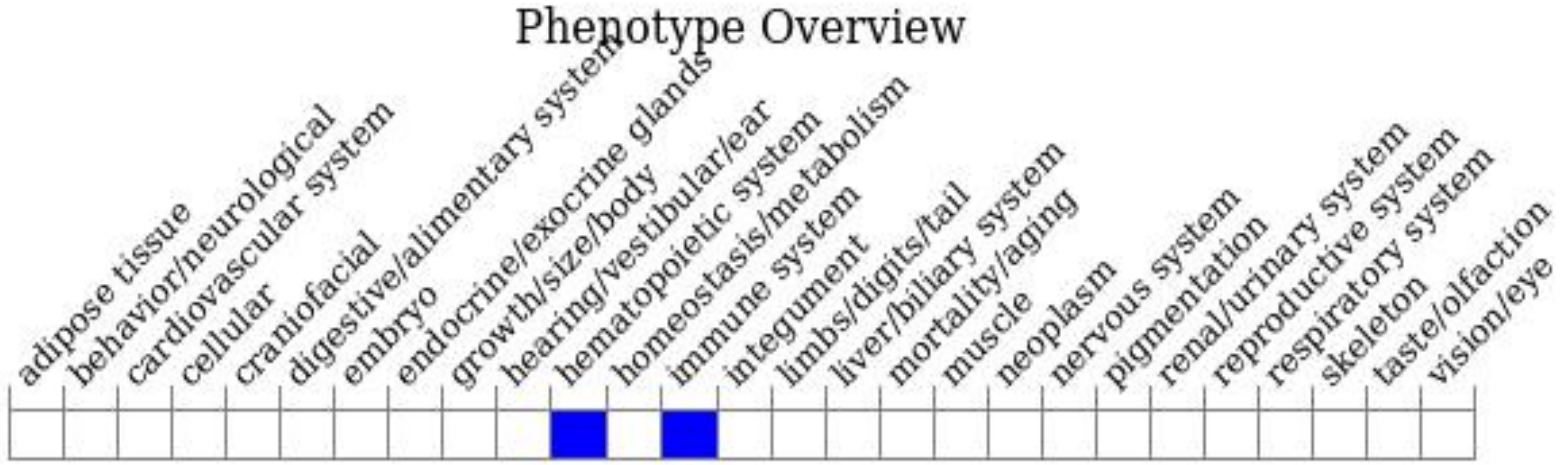
The strategy is based on the design of *Susd6-201* transcript,the transcription is shown below:

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/).

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

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