

Sdk1 Cas9-CKO Strategy

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Design Date:

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Project Overview

Project Name

Sdk1

Project type

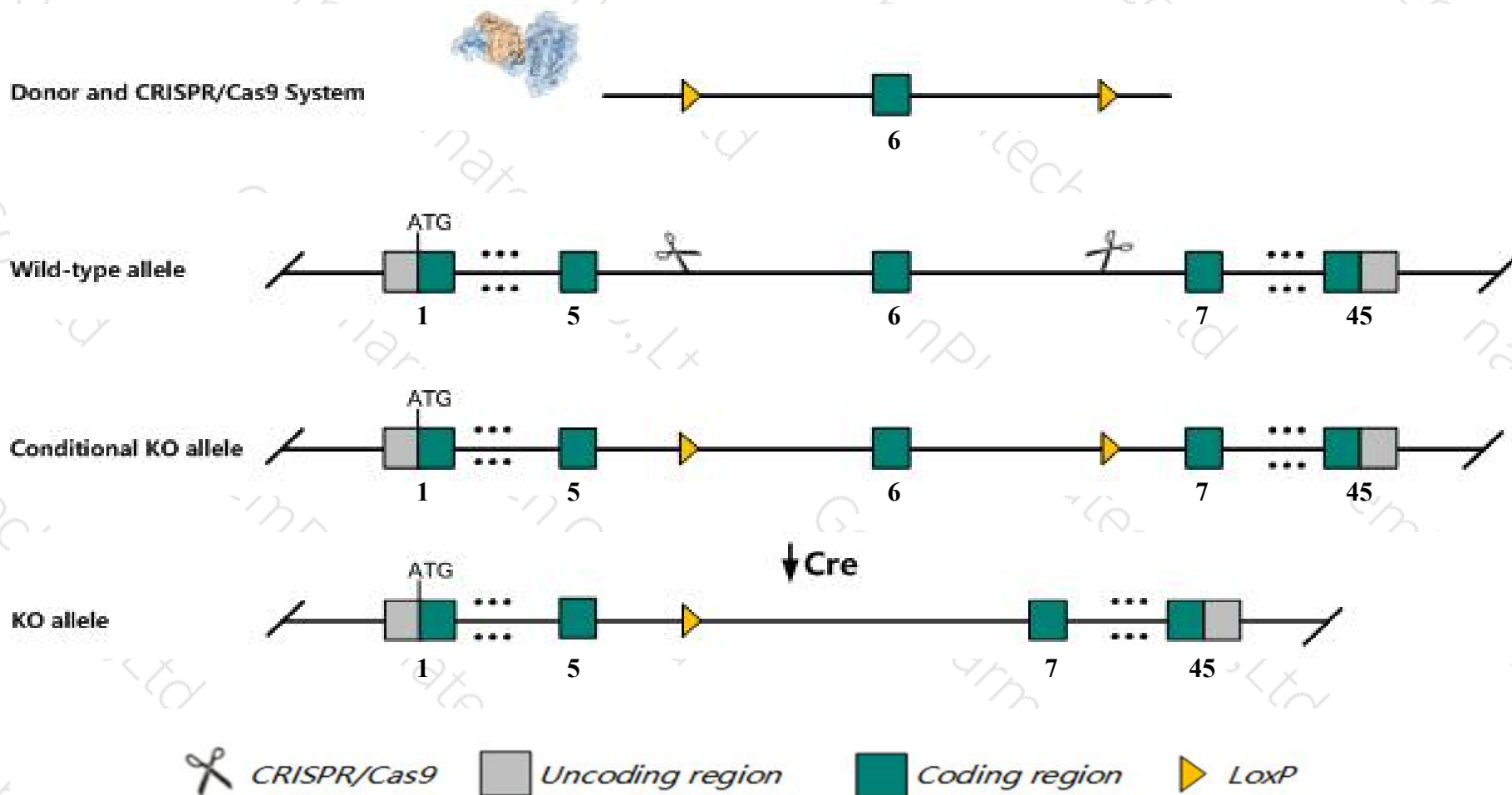
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Sdk1* gene. The schematic diagram is as follows:



Technical routes

- The *Sdk1* gene has 4 transcripts. According to the structure of *Sdk1* gene, exon6 of *Sdk1*-202 (ENSMUST00000085774.10) transcript is recommended as the knockout region. The region contains 112bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Sdk1* 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.

Notice

- The *Sdk1* gene is located on the Chr5. 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.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- 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)

Sdk1 sidekick cell adhesion molecule 1 [Mus musculus (house mouse)]

Gene ID: 330222, updated on 31-Jan-2019

Summary



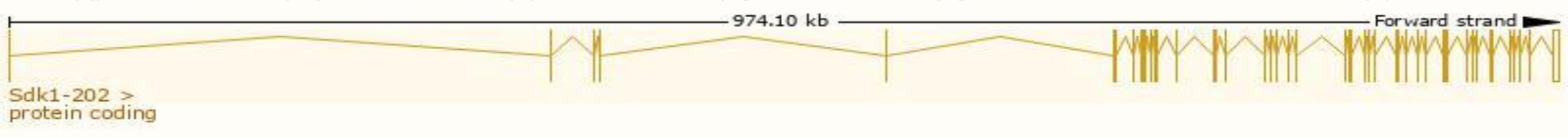
Official Symbol	Sdk1 provided by MGI
Official Full Name	sidekick cell adhesion molecule 1 provided by MGI
Primary source	MGI:MGI:2444413
See related	Ensembl:ENSMUSG00000039683
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	5330440E10, 6720466O15Rik
Expression	Ubiquitous expression in adrenal adult (RPKM 2.6), limb E14.5 (RPKM 2.3) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

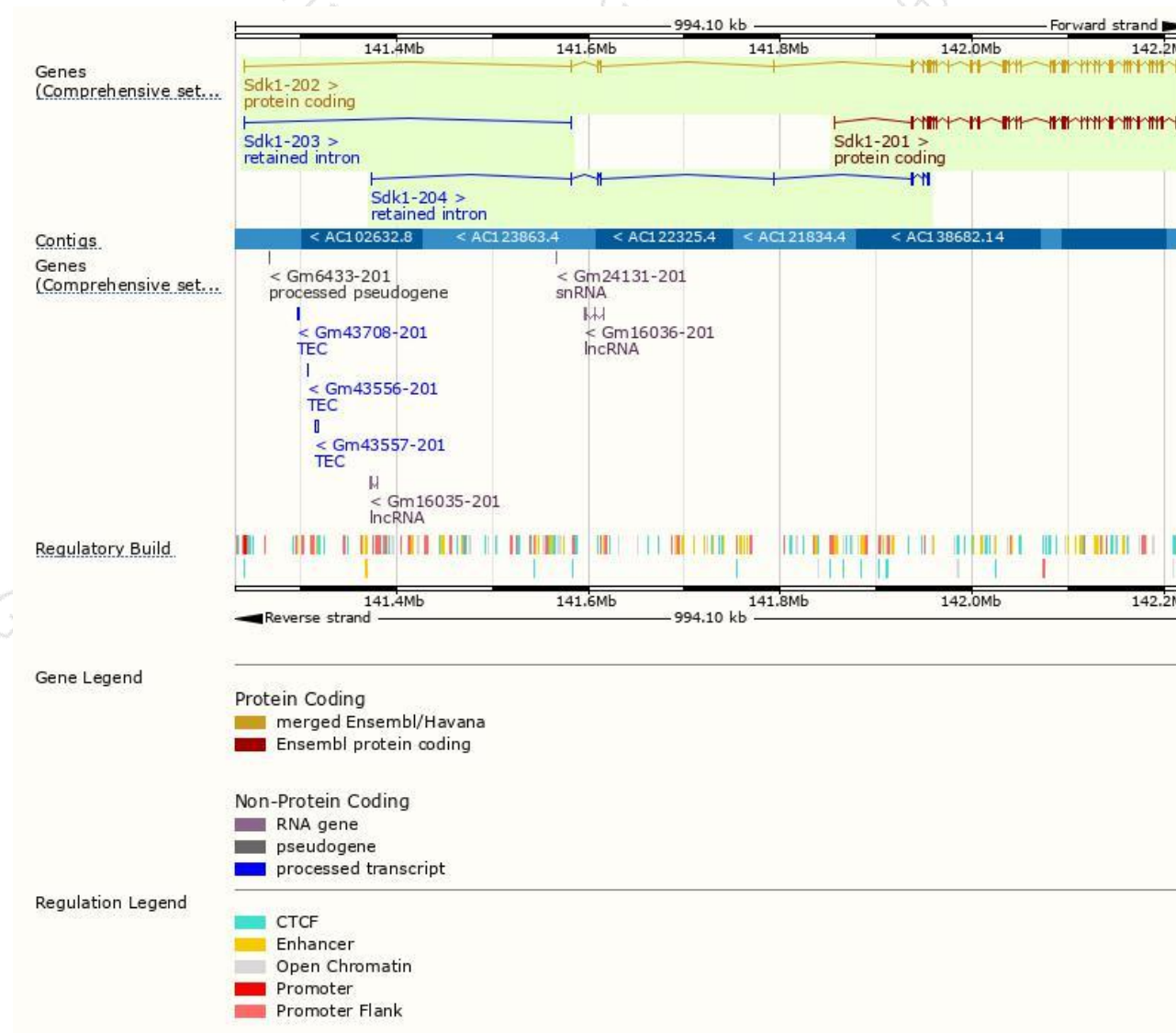
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Sdk1-202	ENSMUST00000085774.10	10352	2193aa	Protein coding	CCDS39360	Q3UH53	TSL:1 GENCODE basic APPRIS P1
Sdk1-201	ENSMUST00000074546.6	7063	1933aa	Protein coding	-	Q3UH53	TSL:1 GENCODE basic
Sdk1-204	ENSMUST00000145908.1	1676	No protein	Retained intron	-	-	TSL:1
Sdk1-203	ENSMUST00000129831.1	387	No protein	Retained intron	-	-	TSL:2

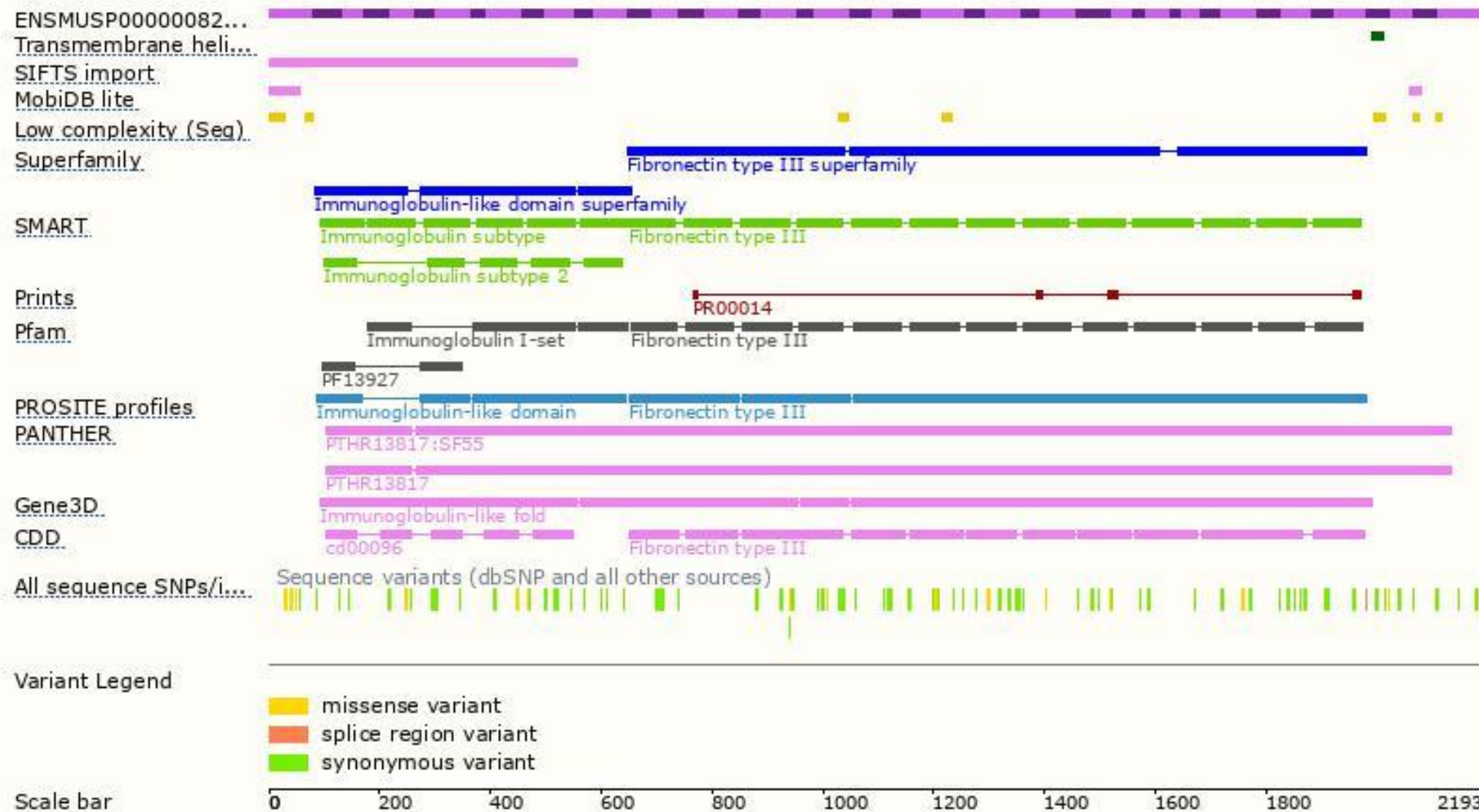
The strategy is based on the design of *Sdk1-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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