

***Stard6* Cas9-CKO Strategy**

Designer: JiaYu

Reviewer: Xiaojing Li

Design Date: 2020-8-26

Project Overview

Project Name

Stard6

Project type

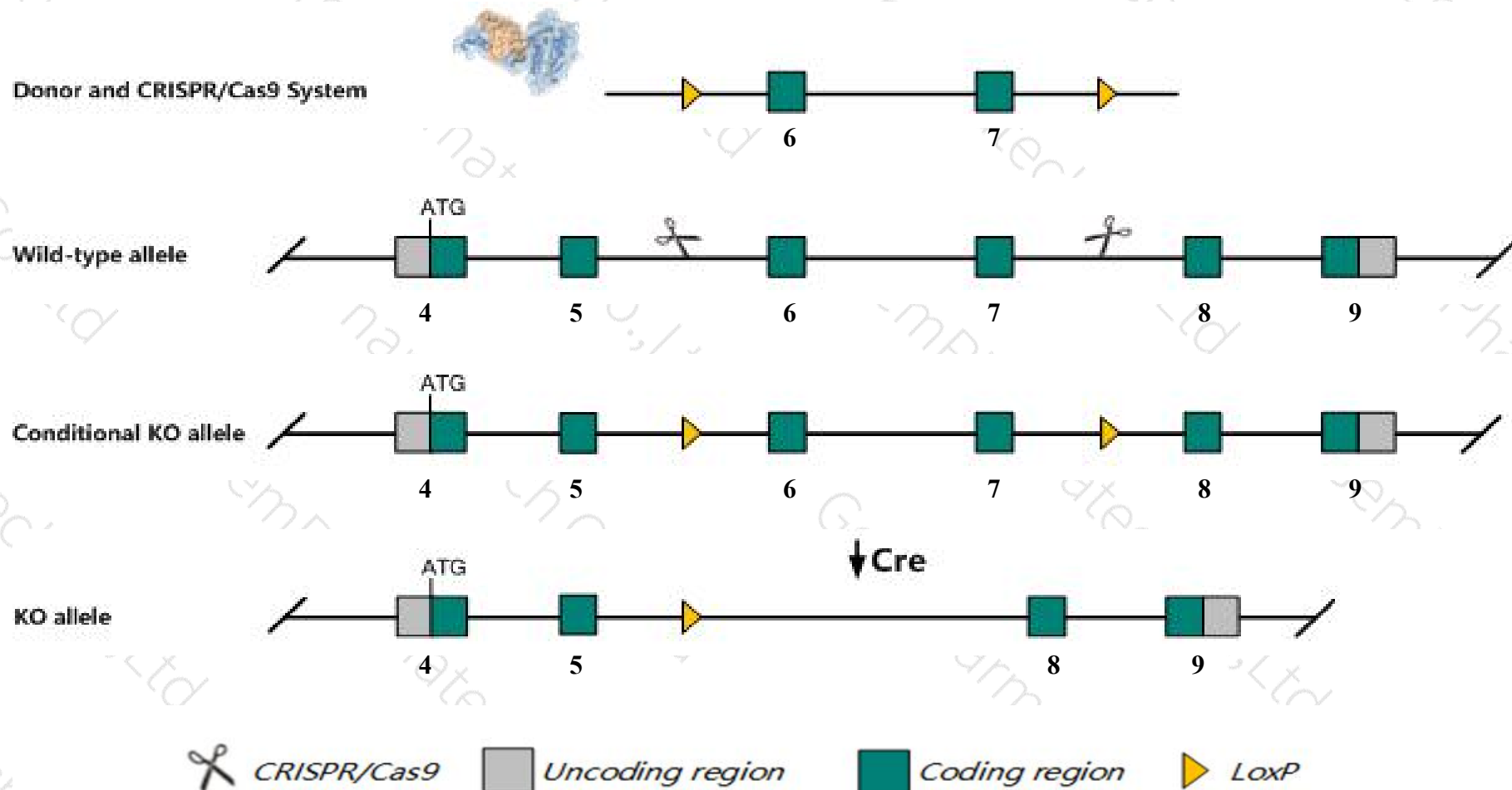
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Stard6* gene. The schematic diagram is as follows:



Technical routes

- The *Stard6* gene has 7 transcripts. According to the structure of *Stard6* gene, exon6-exon7 of *Stard6*-202(ENSMUST00000164223.7) transcript is recommended as the knockout region. The region contains 245bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Stard6* 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 *Stard6* gene is located on the Chr18. 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)

Stard6 StAR-related lipid transfer (START) domain containing 6 [Mus musculus (house mouse)]

Gene ID: 170461, updated on 13-Mar-2020

Summary



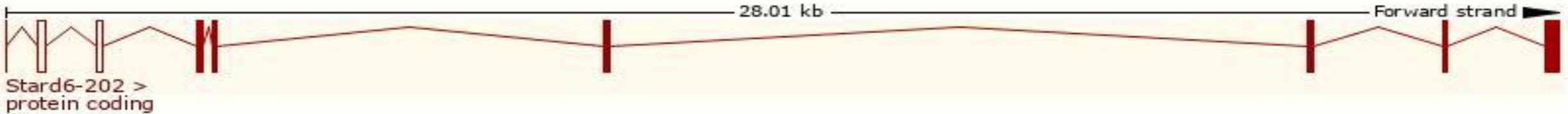
Official Symbol	Stard6 provided by MGI
Official Full Name	StAR-related lipid transfer (START) domain containing 6 provided by MGI
Primary source	MGI:MGI:2156774
See related	Ensembl:ENSMUSG00000079608
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700011K09Rik, 4833424I06Rik, 4933429L05Rik, AI644424
Expression	Biased expression in testis adult (RPKM 26.3) and frontal lobe adult (RPKM 0.4) See more
Orthologs	human all

Transcript information (Ensembl)

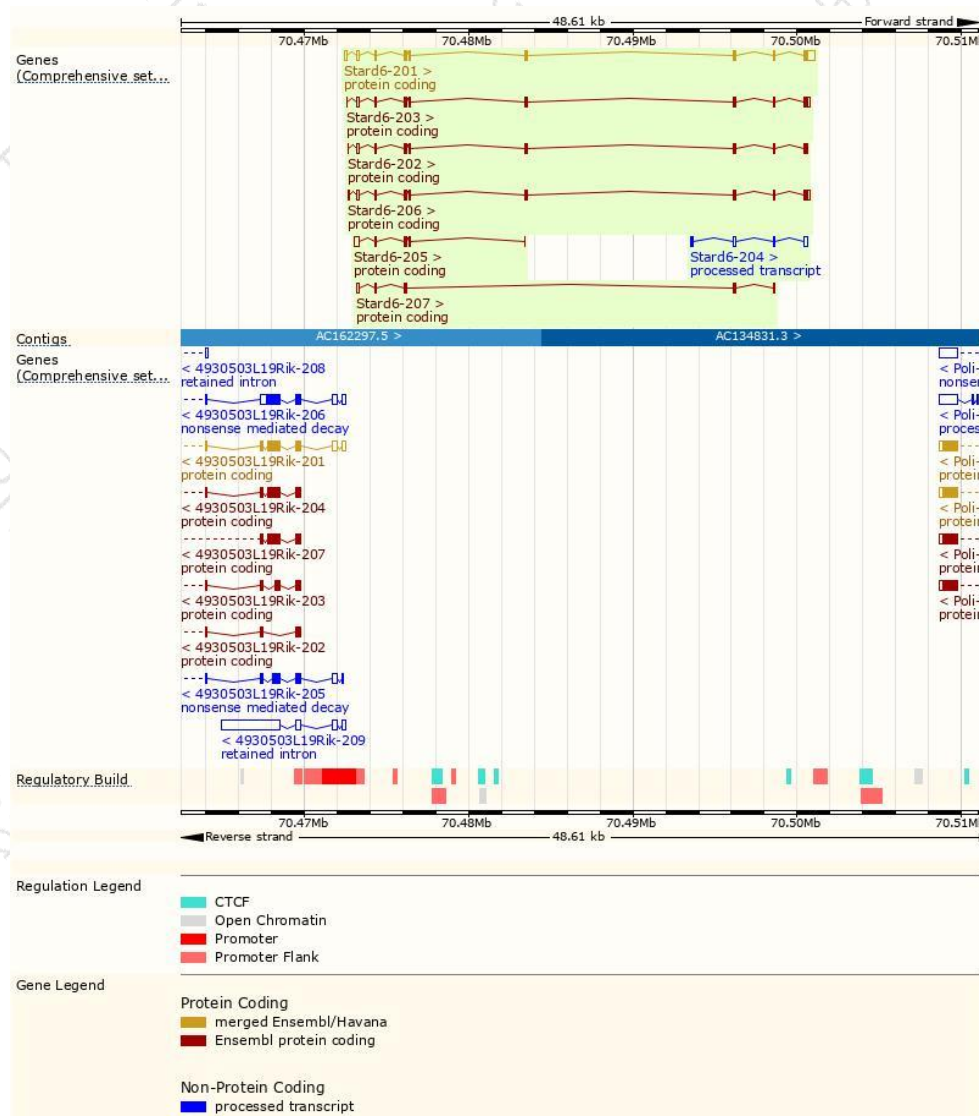
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Stard6-201	ENSMUST00000114959.8	1496	233aa	Protein coding	CCDS37854	P59096 Q9CPT8	TSL:1 GENCODE basic APPRIS P1
Stard6-206	ENSMUST00000174118.7	1185	233aa	Protein coding	CCDS37854	P59096 Q9CPT8	TSL:1 GENCODE basic APPRIS P1
Stard6-203	ENSMUST00000168249.8	1167	233aa	Protein coding	CCDS37854	P59096 Q9CPT8	TSL:1 GENCODE basic APPRIS P1
Stard6-202	ENSMUST00000164223.7	976	233aa	Protein coding	CCDS37854	P59096 Q9CPT8	TSL:1 GENCODE basic APPRIS P1
Stard6-205	ENSMUST00000173951.7	586	54aa	Protein coding	-	G3UYT3	CDS 3' incomplete TSL:5
Stard6-207	ENSMUST00000174667.1	534	98aa	Protein coding	-	G3UY60	CDS 3' incomplete TSL:3
Stard6-204	ENSMUST00000173612.1	547	No protein	Processed transcript	-	-	TSL:1

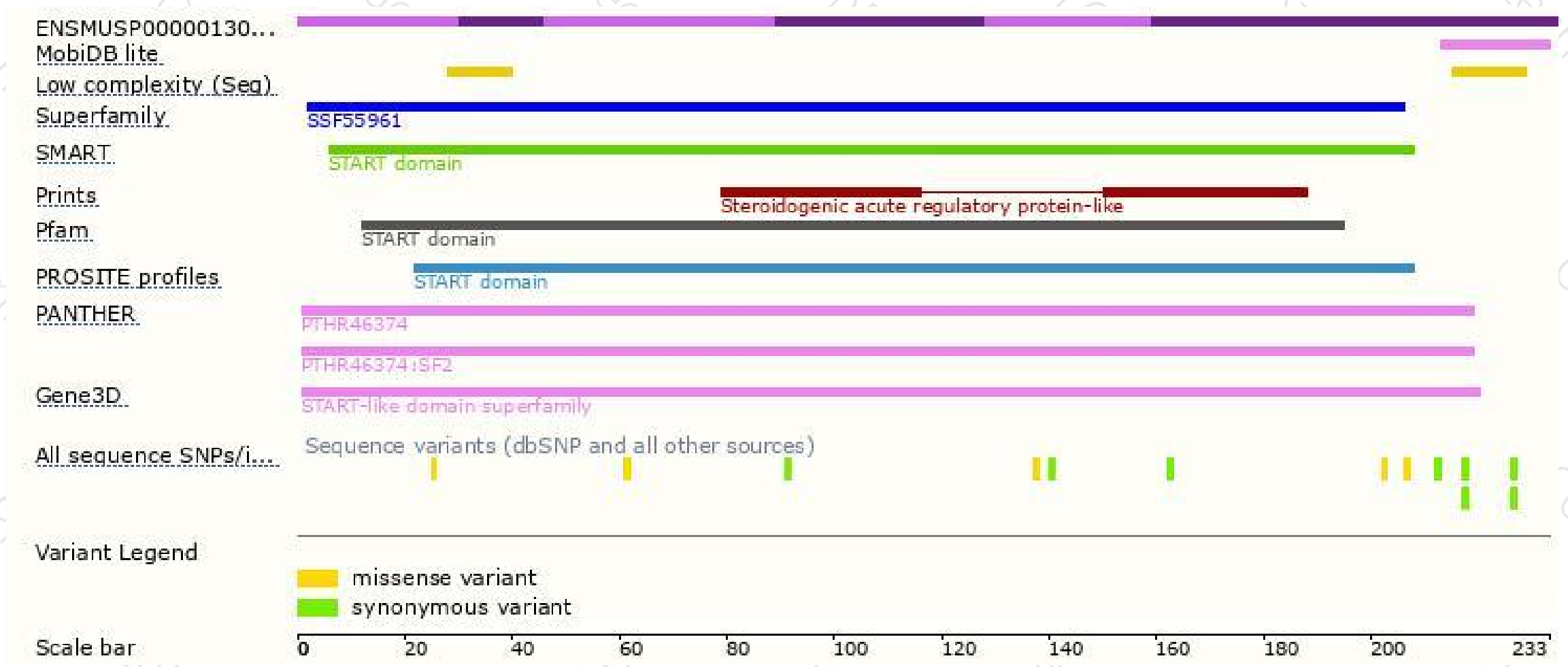
The strategy is based on the design of *Stard6-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

