

***Asb14* Cas9-CKO Strategy**

Designer: Huimin Su

Reviewer: Ruiuri Zhang

Design Date: 2020-4-29

Project Overview

Project Name

Asb14

Project type

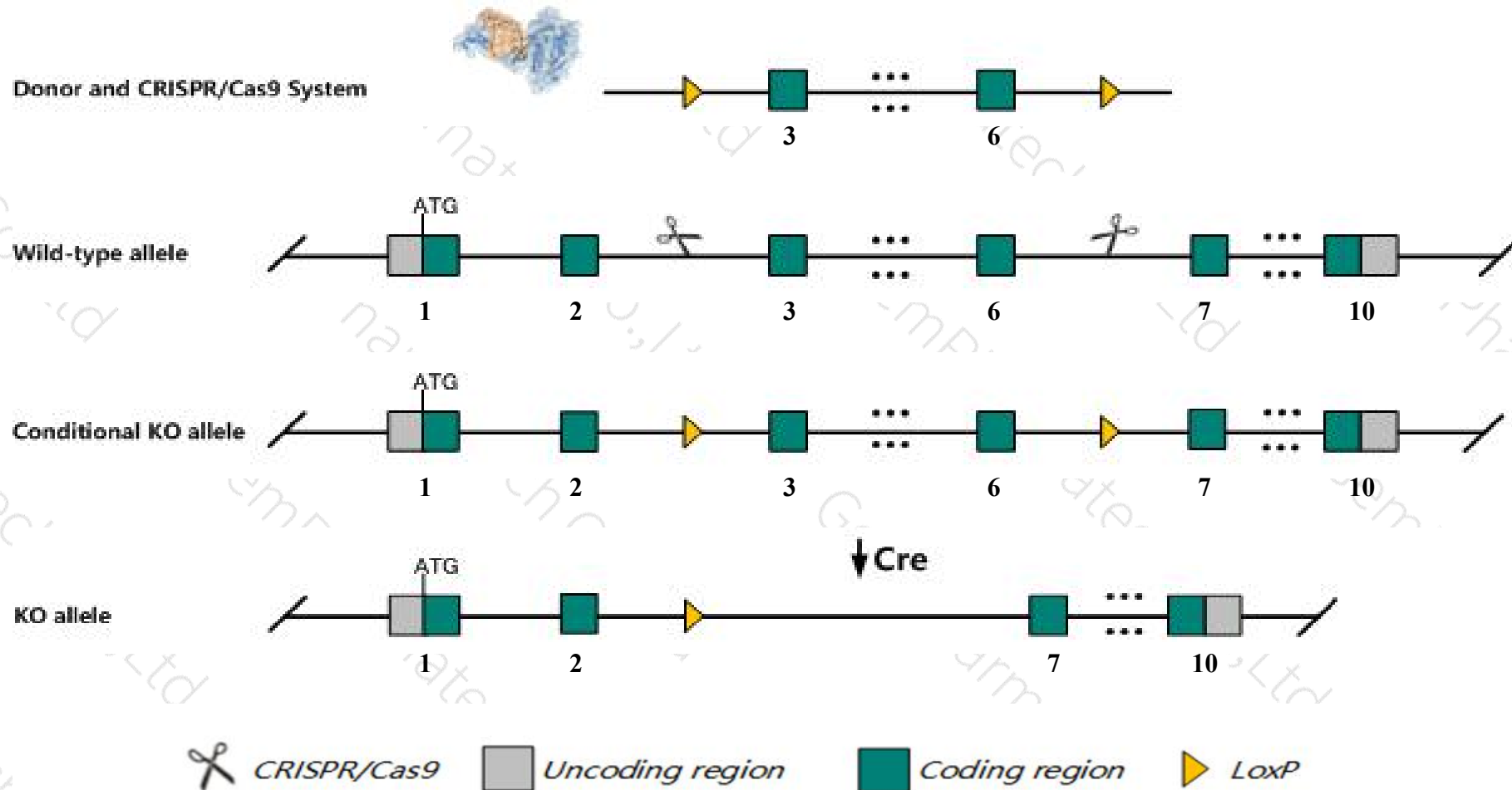
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Asb14* gene. The schematic diagram is as follows:



- The *Asb14* gene has 7 transcripts. According to the structure of *Asb14* gene, exon3-exon6 of *Asb14-201* (ENSMUST00000090337.11) transcript is recommended as the knockout region. The region contains 593bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Asb14* 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 *Asb14* gene is located on the Chr14. 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)

Asb14 ankyrin repeat and SOCS box-containing 14 [*Mus musculus* (house mouse)]

Gene ID: 142687, updated on 13-Mar-2020

Summary



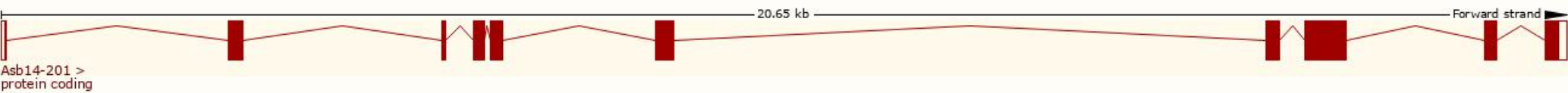
Official Symbol	Asb14 provided by MGI
Official Full Name	ankyrin repeat and SOCS box-containing 14 provided by MGI
Primary source	MGI:MGI:2655107
See related	Ensembl:ENSMUSG000000021898
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Asb-14
Expression	Biased expression in heart adult (RPKM 27.4) and mammary gland adult (RPKM 3.1) See more
Orthologs	human all

Transcript information (Ensembl)

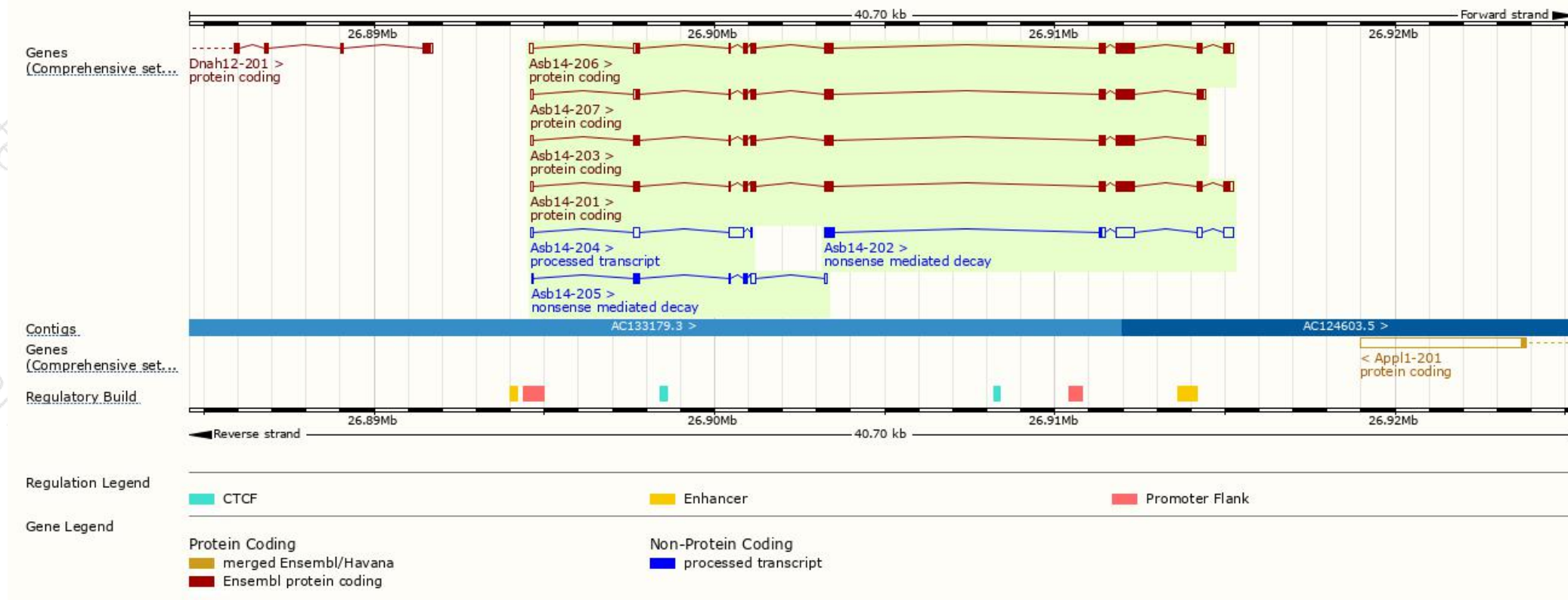
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Asb14-201	ENSMUST00000090337.11	2015	615aa	Protein coding	CCDS49431	E9QPD0	TSL:5 GENCODE basic APPRIS P2
Asb14-203	ENSMUST00000165929.3	1815	569aa	Protein coding	CCDS36842	A0A0R4J236	TSL:1 GENCODE basic
Asb14-206	ENSMUST00000238987.1	2062	587aa	Protein coding	-	-	GENCODE basic APPRIS ALT2
Asb14-207	ENSMUST00000239004.1	1817	541aa	Protein coding	-	-	GENCODE basic
Asb14-202	ENSMUST00000165305.2	1432	118aa	Nonsense mediated decay	-	E9PWC7	CDS 5' incomplete TSL:5
Asb14-205	ENSMUST00000167929.1	650	121aa	Nonsense mediated decay	-	E9Q6H3	TSL:3
Asb14-204	ENSMUST00000167365.2	709	No protein	Processed transcript	-	-	TSL:5

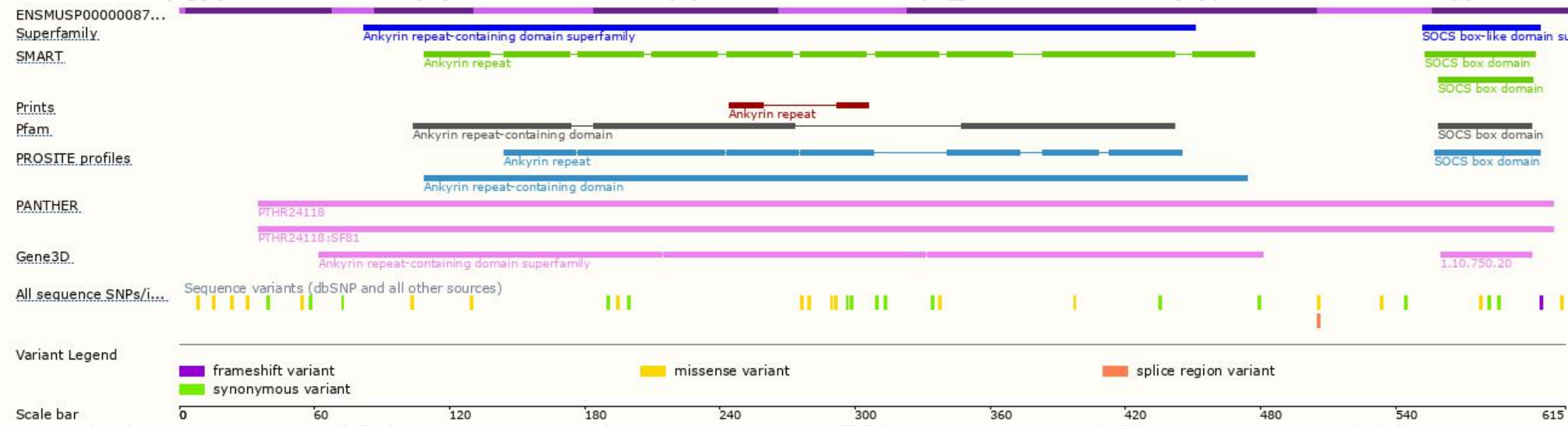
The strategy is based on the design of *Asb14-201* transcript, the transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

