

Ascc2 Cas9-KO Strategy

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Design Date:	2019-11-16

Project Overview

Project Name

Ascc2

Project type

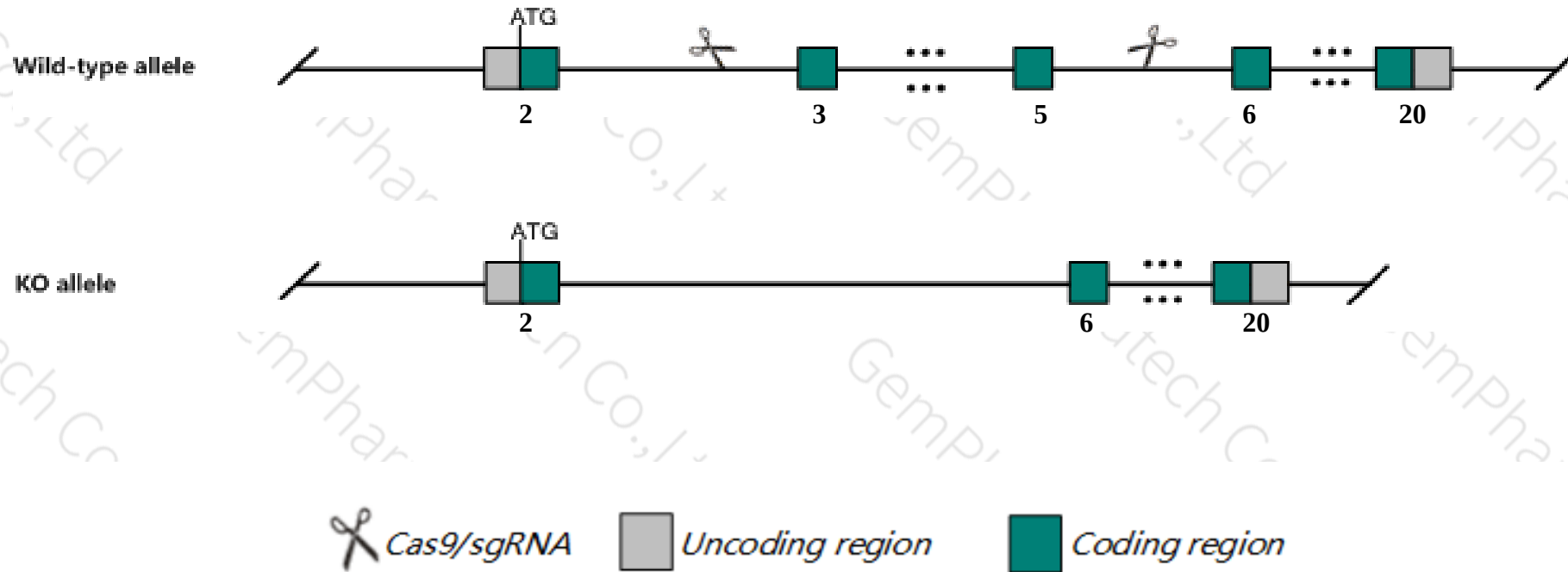
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ascc2* gene. The schematic diagram is as follows:



- The *Ascc2* gene has 2 transcripts. According to the structure of *Ascc2* gene, exon3-exon5 of *Ascc2-201* (ENSMUST00000070257.13) transcript is recommended as the knockout region. The region contains 460bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ascc2* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Ascc2* gene is located on the Chr11. 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.

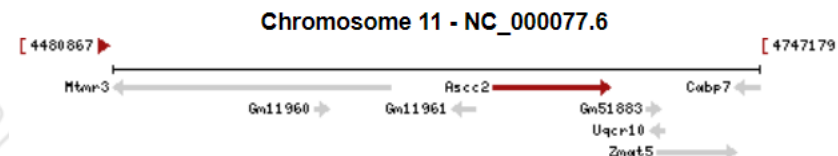
Gene information (NCBI)

Ascc2 activating signal cointegrator 1 complex subunit 2 [*Mus musculus* (house mouse)]

Gene ID: 75452, updated on 12-Aug-2019

Summary

Official Symbol	Ascc2 provided by MGI
Official Full Name	activating signal cointegrator 1 complex subunit 2 provided by MGI
Primary source	MGI:MGI:1922702
See related	Ensembl:ENSMUSG00000020412
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI482016; ASC1p100; AW046480; 1700011111Rik; 2610034L15Rik
Expression	Ubiquitous expression in testis adult (RPKM 15.3), bladder adult (RPKM 12.2) and 28 other tissues See more
Orthologs	human all

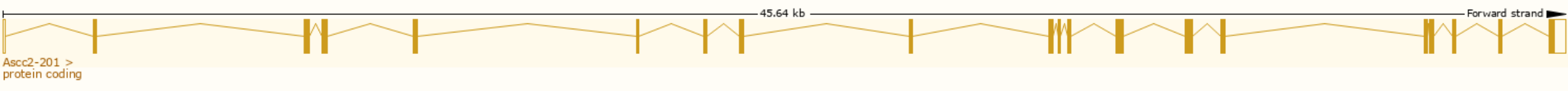


Transcript information (Ensembl)

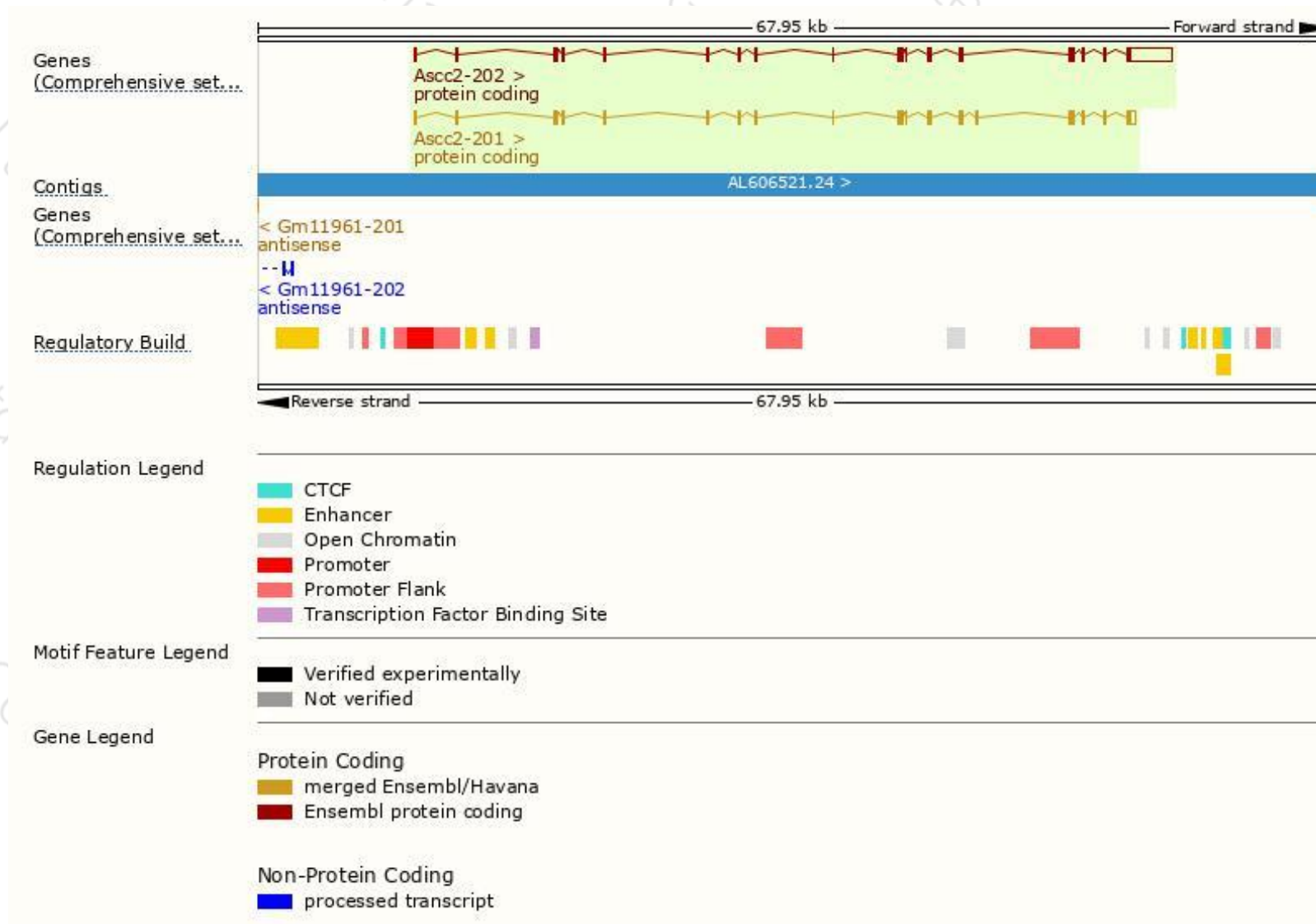
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Translation ID	Biotype	CCDS	UniProt	Flags
Ascc2-201	ENSMUST00000070257.13	2650	749aa	ENSMUSP00000063272.7	Protein coding	CCDS24387	Q91WR3	TSL:1 Gencode basic APPRIS P2
Ascc2-202	ENSMUST00000109930.2	4844	709aa	ENSMUSP00000105556.2	Protein coding	-	Q91WR3	TSL:1 Gencode basic APPRIS ALT2

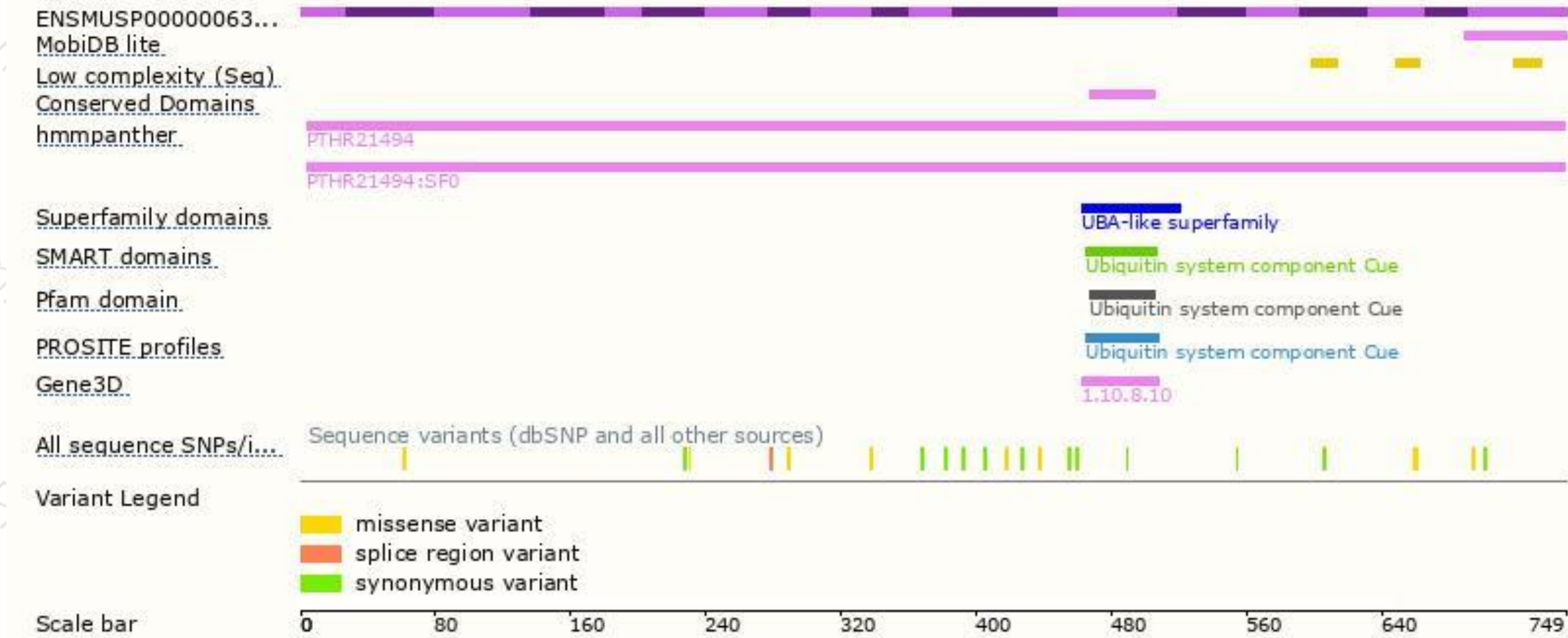
The strategy is based on the design of Ascc2-201 transcript,The transcription is shown below



Genomic location distribution

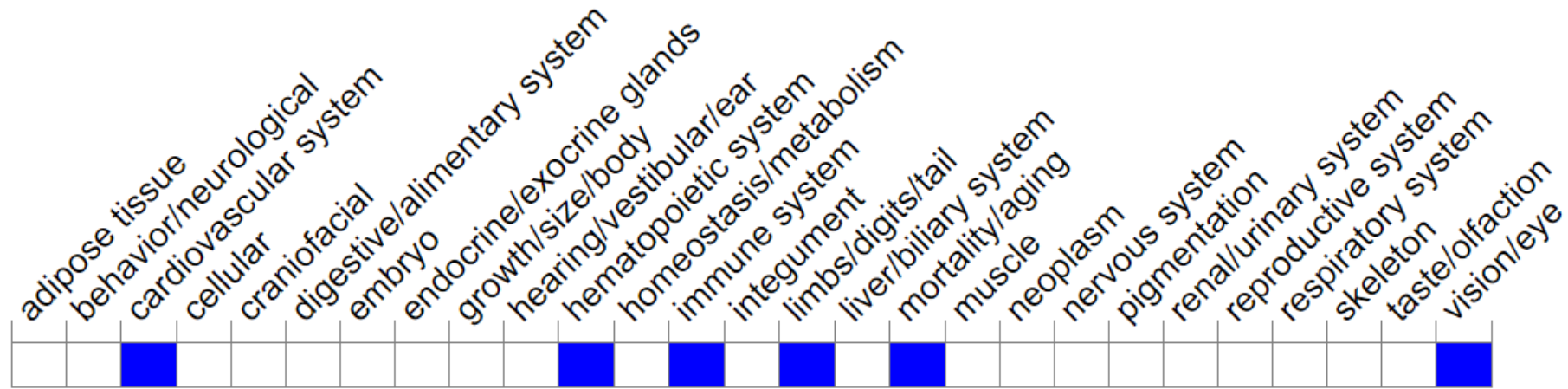


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview ?



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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