

Adgrg6 Cas9-KO Strategy

Designer:

Huan Wang

Design Date:

2019-8-3

Project Overview

Project Name

Adgrg6

Project type

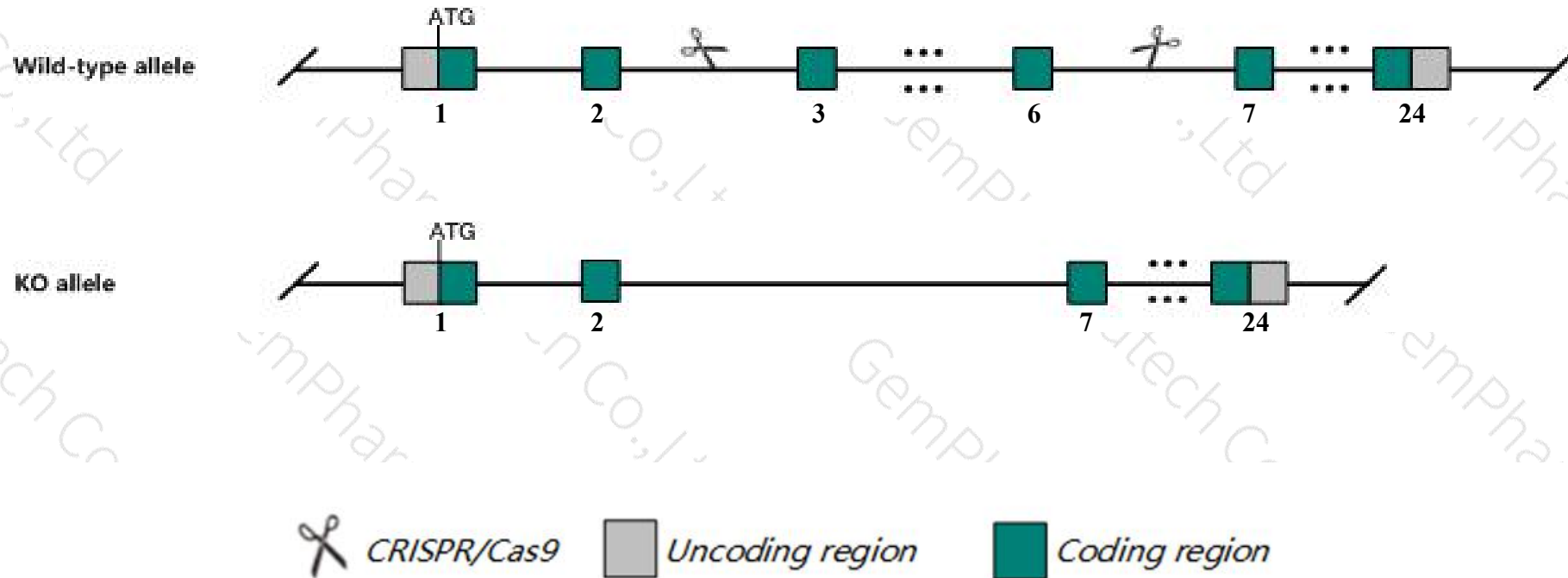
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adgrg6* gene. The schematic diagram is as follows:



- The *Adgrg6* gene has 4 transcripts. According to the structure of *Adgrg6* gene, exon3-exon6 of *Adgrg6-201* (ENSMUST00000041168.5) transcript is recommended as the knockout region. The region contains 1121bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Adgrg6* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null mutation die during organogenesis and display signs of circulatory failure.
- The *Adgrg6* gene is located on the Chr10. 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)

Adgrg6 adhesion G protein-coupled receptor G6 [Mus musculus (house mouse)]

Gene ID: 215798, updated on 31-Jan-2019

Summary



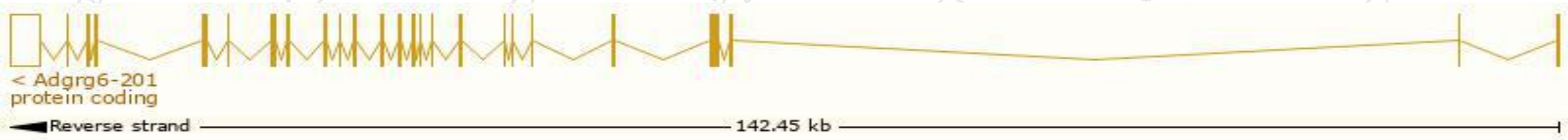
Official Symbol	Adgrg6 provided by MGI
Official Full Name	adhesion G protein-coupled receptor G6 provided by MGI
Primary source	MGI:MGI:1916151
See related	Ensembl:ENSMUSG00000039116
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1190004A11Rik, AI449247, AW045736, DREG, Gm222, Gpr126
Expression	Biased expression in placenta adult (RPKM 10.1), lung adult (RPKM 8.1) and 8 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

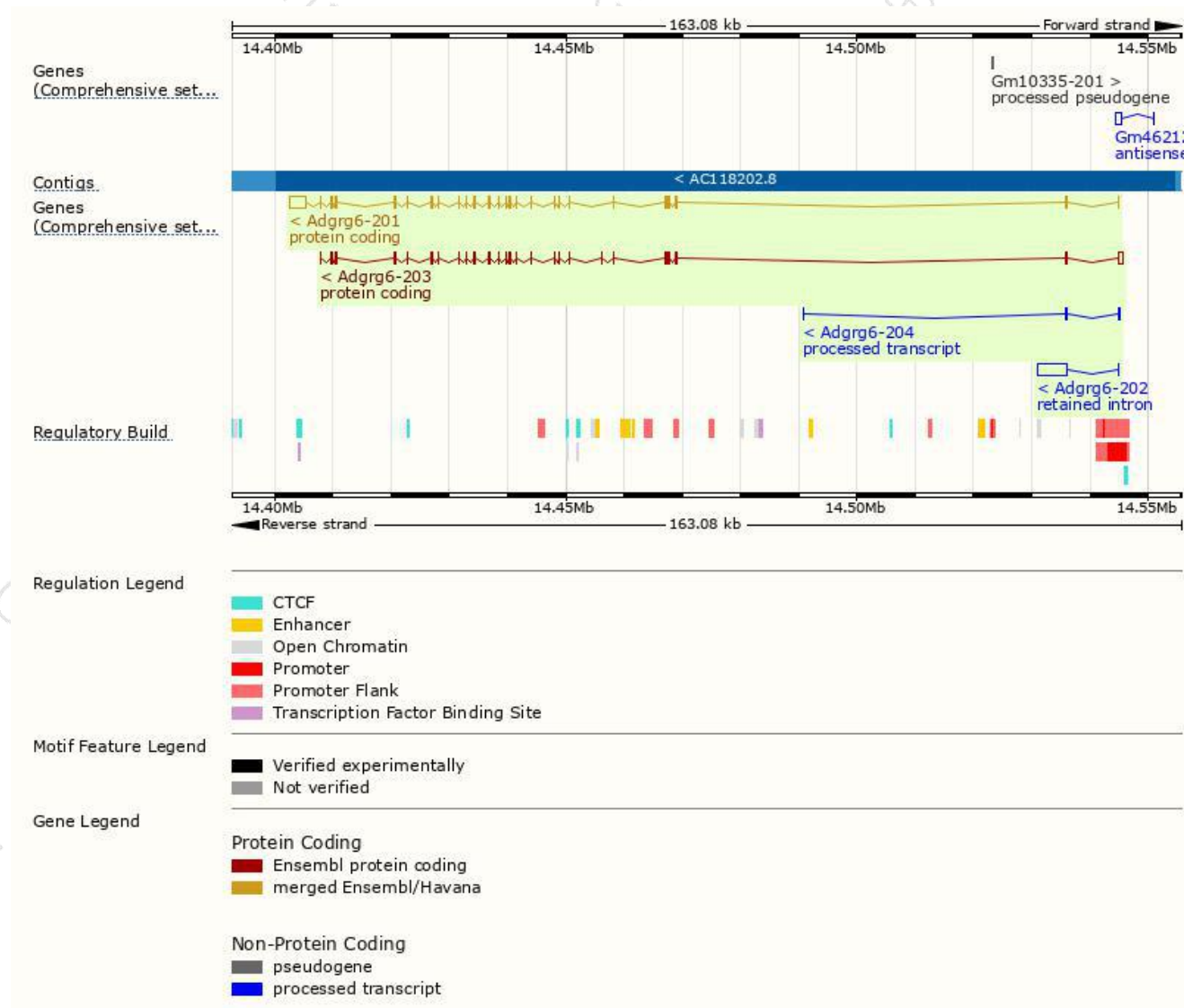
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adgrg6-201	ENSMUST00000041168.5	6507	1165aa	Protein coding	CCDS35848	Q6F3F9	TSL:1 GENCODE basic APPRIS P2
Adgrg6-203	ENSMUST00000208429.2	4326	1193aa	Protein coding	-	A0A140LIH4	TSL:5 GENCODE basic APPRIS ALT2
Adgrg6-204	ENSMUST00000208905.1	443	No protein	Processed transcript	-	-	TSL:3
Adgrg6-202	ENSMUST00000207953.1	5121	No protein	Retained intron	-	-	TSL:1

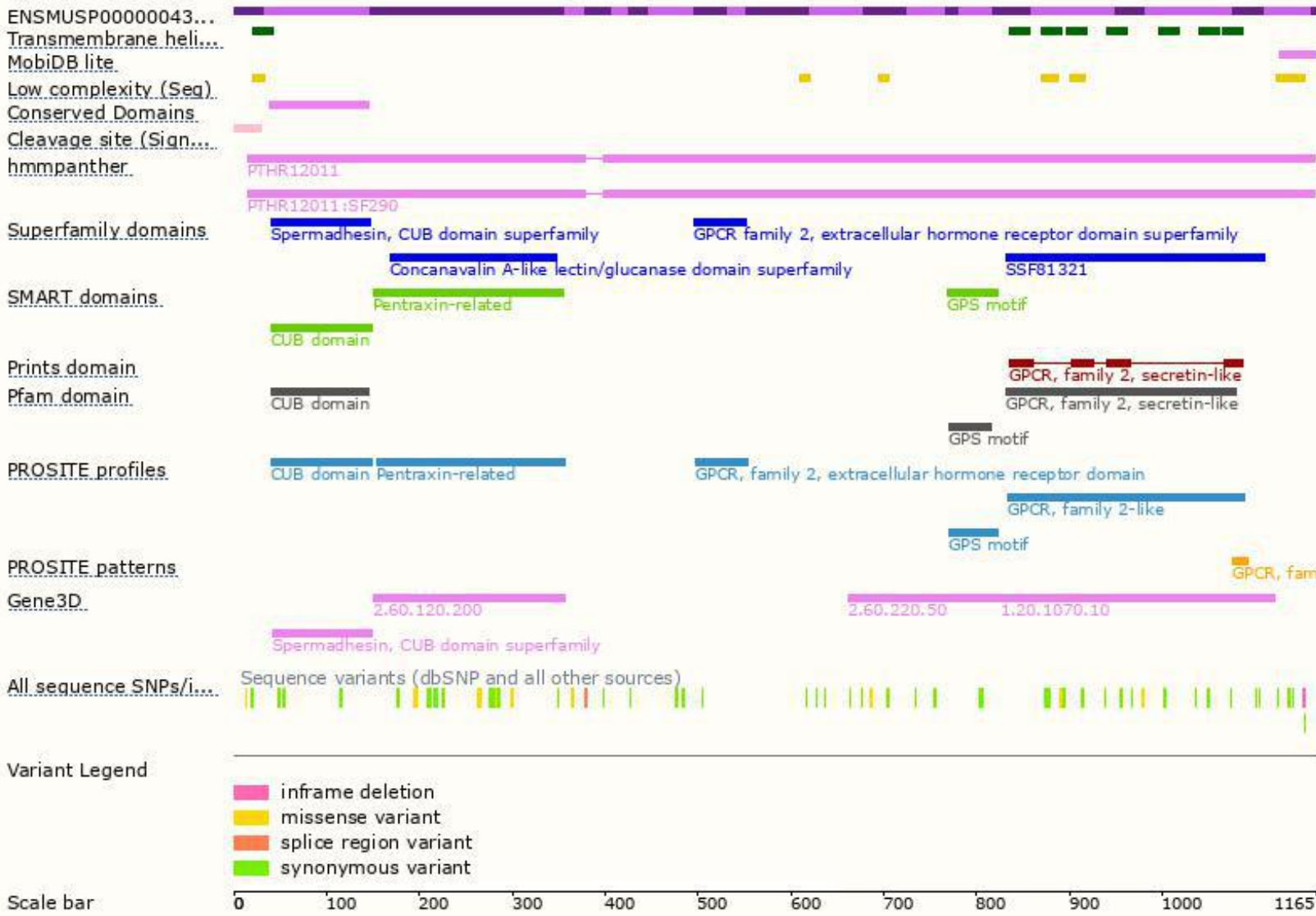
The strategy is based on the design of *Adgrg6-201* transcript,The transcription is shown below



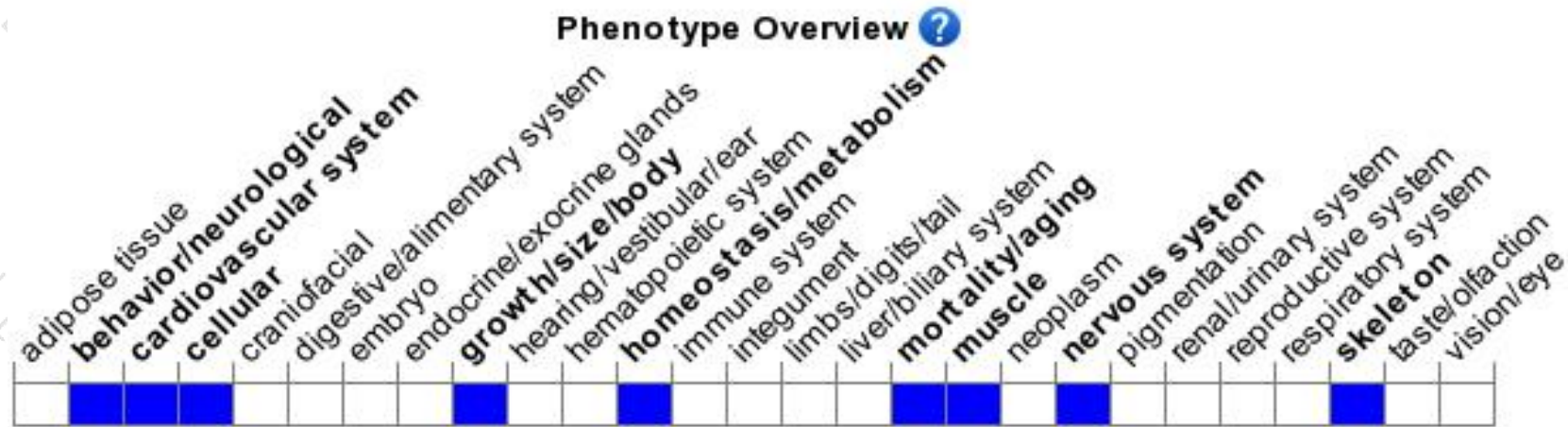
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a null mutation die during organogenesis and display signs of circulatory failure.

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

Tel: 400-9660890

