Adgra1 Cas9-KO Strategy

Designer: Jinling Wang

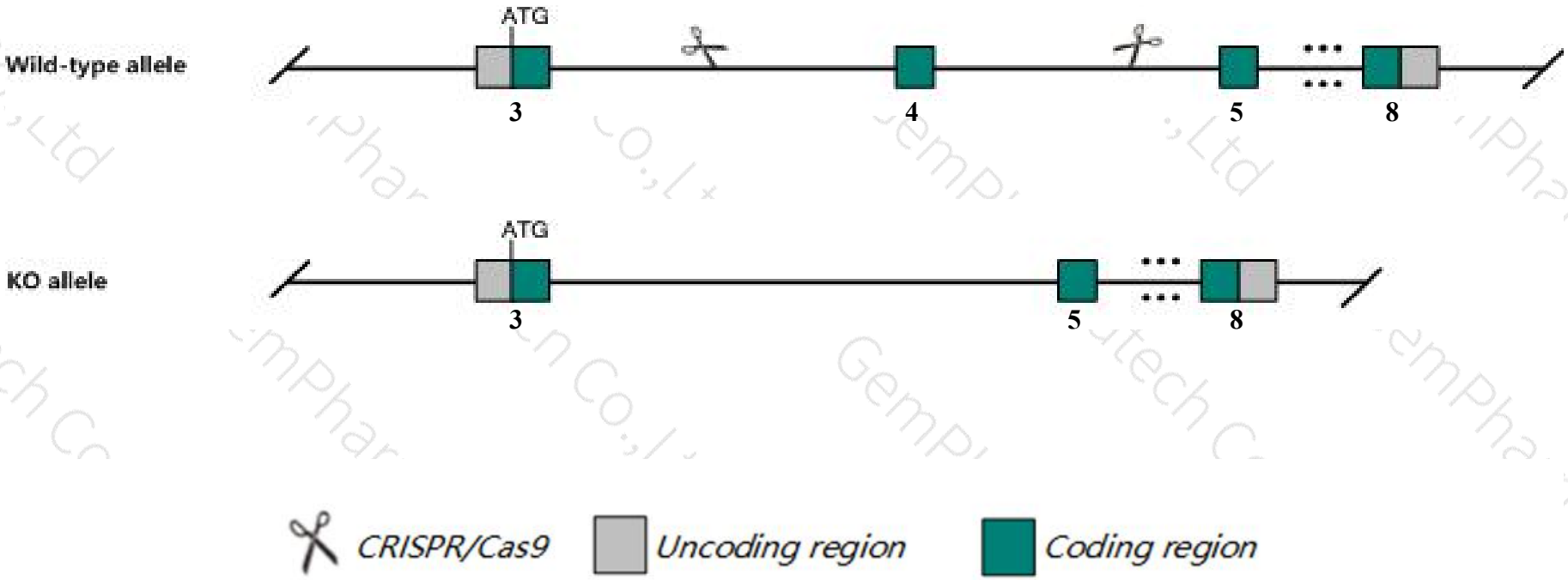
Design Date: 2019-7-17

Project Overview

Project Name	***Adgra1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adgra1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Adgra1* gene has 3 transcripts. According to the structure of *Adgra1* gene, exon4 of *Adgra1-201* (ENSMUST00000026548.13) transcript is recommended as the knockout region.The region contains 128bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Adgra1* gene. The brief process is as follows: CRISPR/Cas9 syster

Notice

➢ The *Adgra1* gene is located on the Chr7. 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）

集萃药康 GemPharmatech

Adgra1 adhesion G protein-coupled receptor A1 [Mus musculus (house mouse)]

Gene ID: 52389, updated on 31-Jan-2019

Summary

Official Symbol	Adgra1 provided by MGI
Official Full Name	adhesion G protein-coupled receptor A1 provided by MGI
Primary source	MGI:MGI:1277167
See related	Ensembl:ENSMUSG00000025475
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	2900059M17Rik, D7Ertd680e, Gpr123
Expression	Biased expression in cortex adult (RPKM 8.4), frontal lobe adult (RPKM 7.5) and 8 other tissues See more
Orthologs	human all

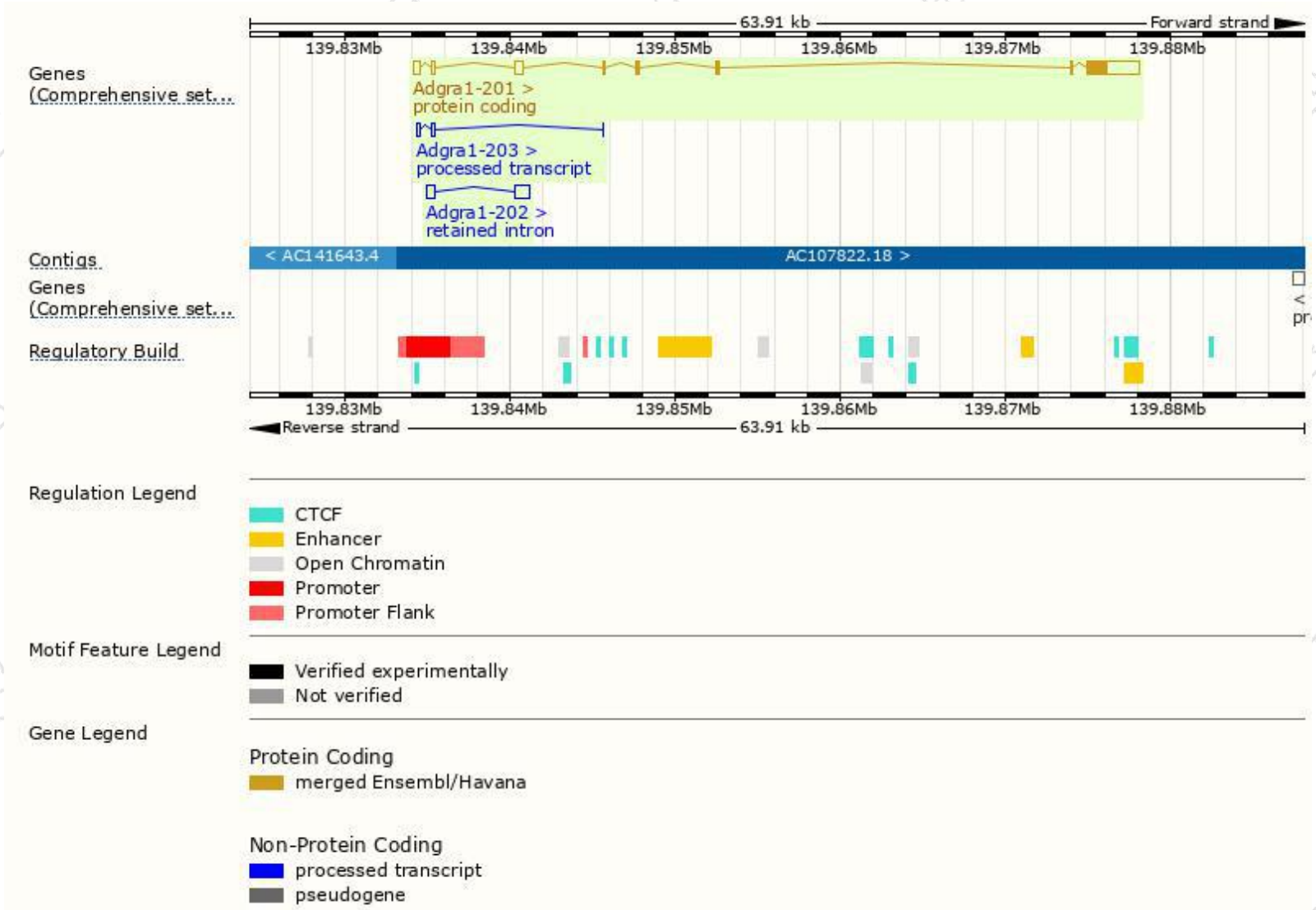
Transcript information（Ensembl）

The gene has 3 transcripts,all transcripts are shown below:

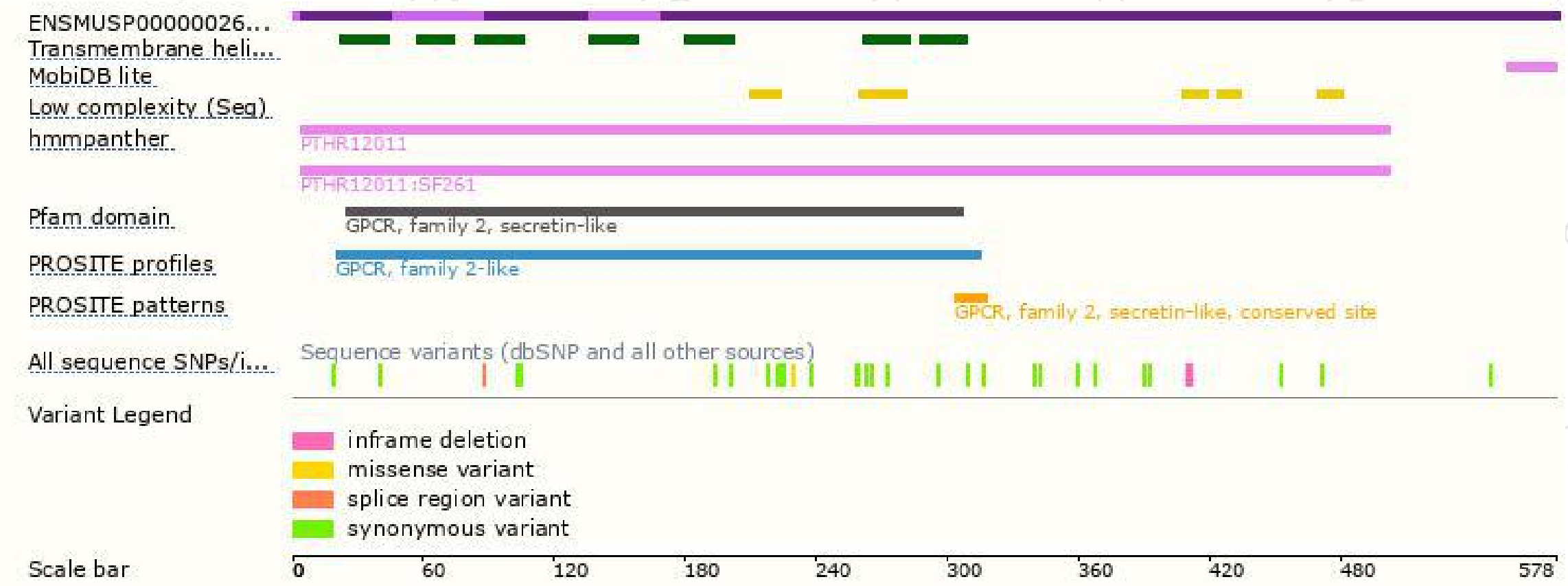
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adgra1-201	ENSMUST00000026548.13	4758	578aa	Protein coding	CCDS40171	Q8C4G9	TSL:1 GENCODE basic APPRIS P1
Adgra1-203	ENSMUST00000137584.1	416	No protein	Processed transcript	-	-	TSL:3
Adgra1-202	ENSMUST00000129454.1	1413	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Adgra1-201* transcript,The transcription is shown below

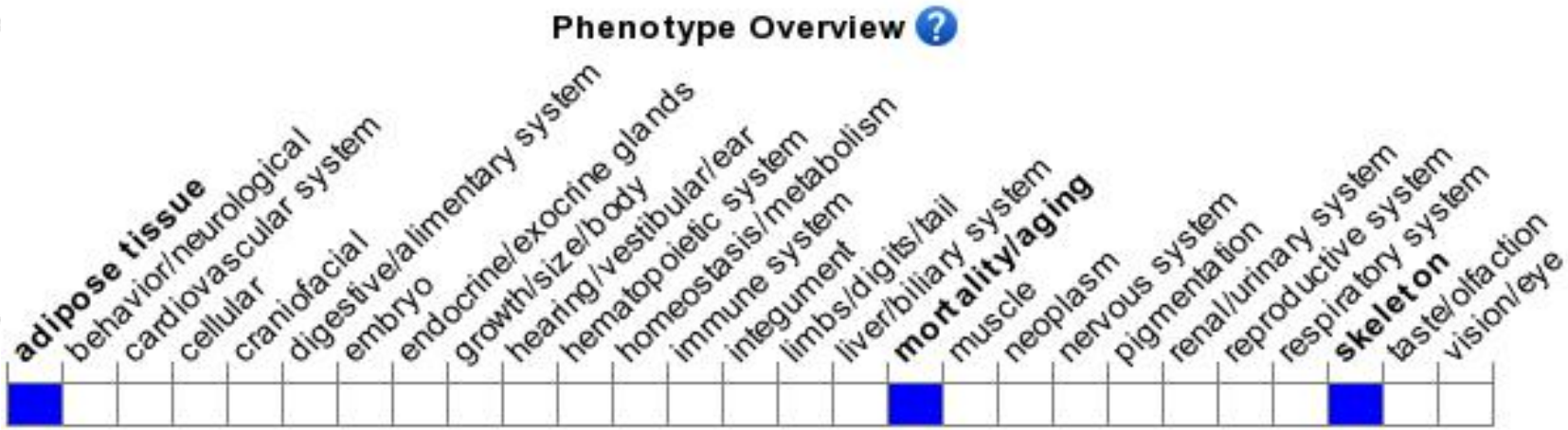
Genomic location distribution



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/).

集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd