Adgrg4 Cas9-KO *Strategy*

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Project Overview

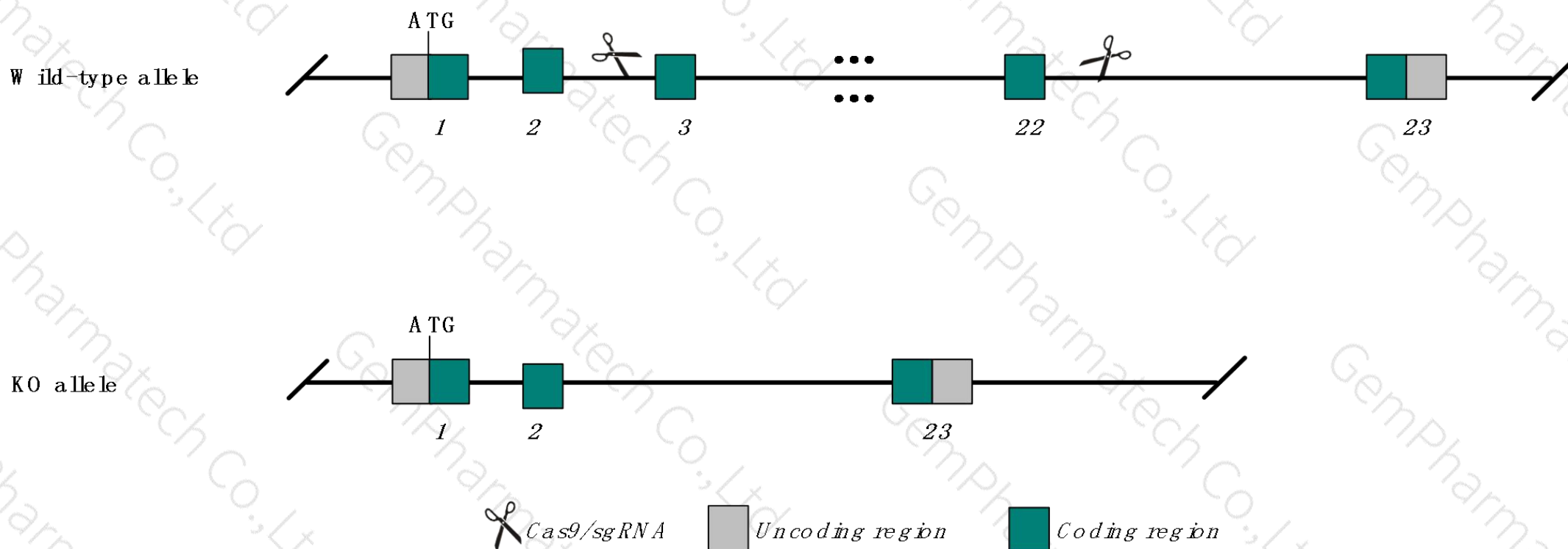|	
Project Name	*Adgrg4*
Project type	Cas9-KO
Animal background	C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the Adgrg4 gene. The schematic diagram is as follows:

Technical routes

➢ The Adgrg4 gene has 6 transcripts.According to the structure of Adgrg4 gene, exon3- exon22 of Adgrg4-204(ENSMUST00000153784. 7）transcript is recommended as the knockout region.The region contains all coding seqence.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *xxx* gene. The brief process is as follows: gRNA was transcribed in vitro.Cas9 and gRNA 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.

Notice

➢ The *Adgrg4* gene is located on the Chrx. 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information（NCBI）

Adgrg4　adhesion G protein-coupled receptor G4 [*Mus musculus* (house mouse)]

Gene ID: 236798, updated on 19-Mar-2019

▲ Summary

Official Symbol	Adgrg4 provided by MGI
Official Full Name	adhesion G protein-coupled receptor G4 provided by MGI
Primary source	MGI:MGI:2685213
See related	Ensembl:ENSMUSG00000053852
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	Gm367; PGR17; Gpr112
Annotation information	Annotation category: partial on reference assembly
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information（Ensembl）

The gene has 6 transcripts, and all transcripts are shown below ：

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adgrg4-206	ENSMUST00000168724.1	531	177aa	Protein coding	-	Q80T58	TSL:NA GENCODE basic
Adgrg4-205	ENSMUST00000154818.7	8857	2868aa	Protein coding	-	B7ZCC9	TSL:5 GENCODE basic APPRIS ALT2
Adgrg4-204	ENSMUST00000153784.7	9329	3073aa	Protein coding	-	B7ZCC9	TSL:5 GENCODE basic APPRIS P5
Adgrg4-203	ENSMUST00000145035.1	705	205aa	Protein coding	-	F6Y0G3	CDS 5' incomplete TSL:3
Adgrg4-202	ENSMUST00000136396.7	8243	2736aa	Protein coding	-	B7ZCD1	CDS 5' incomplete TSL:5
Adgrg4-201	ENSMUST00000096431.9	1137	216aa	Protein coding	-	Q3UNS7	TSL:2 GENCODE basic

The strategy is based on the design of Adgrg4-204 transcript,The transcription is shown below
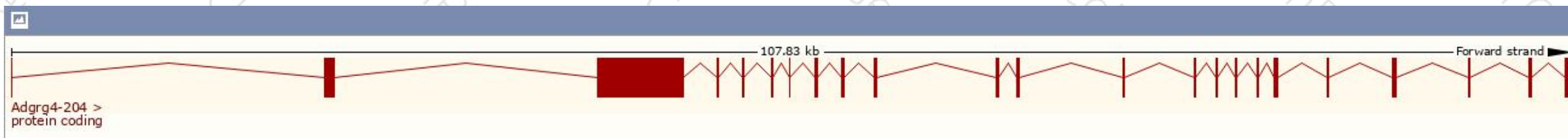
Genomic location（Ensembl）
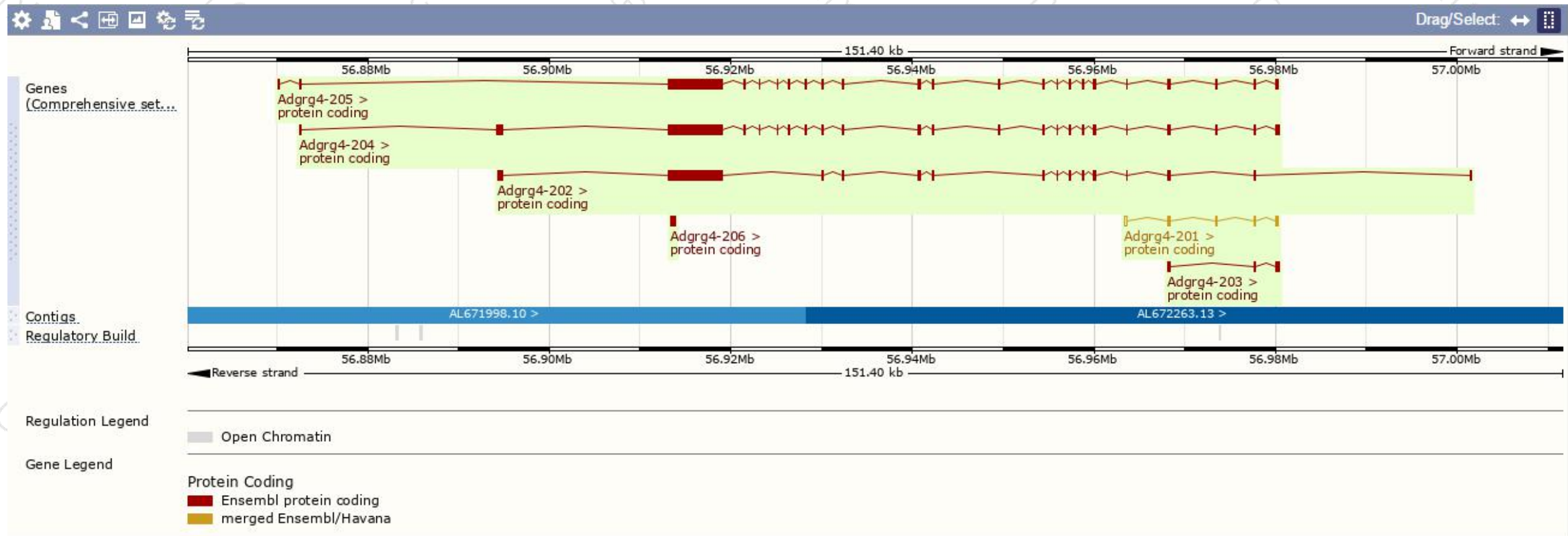
Protein domain（Ensembl）

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