Adgrf5 Cas9-KO Strategy

Designer: **Jinling Wang**

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集萃药康 GemPharmatech

Project Overview

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Project Name	***Adgrf5***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adgrf5* gene. The schematic diagram is as follows:

Technical routes

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- The *Adgrf5* gene has 6 transcripts. According to the structure of *Adgrf5* gene, exon3 of *Adgrf5-201* (ENSMUST00000113599.1) transcript is recommended as the knockout region.The region contains 55bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Adgrf5* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Mice homozygous for a knock-out allele exhibit premature death, decreased body weight and respiratory distress associated with pulmonary alveolar proteinosis.

- The *Adgrf5* gene is located on the Chr17. 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）

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Adgrf5 adhesion G protein-coupled receptor F5 [Mus musculus (house mouse)]

Gene ID: 224792, updated on 25-Mar-2019

Summary

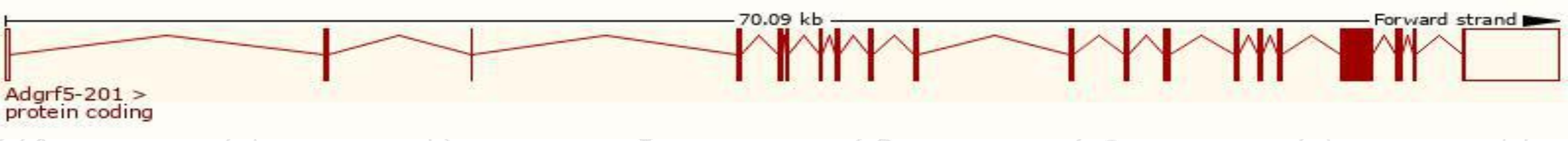
Official Symbol	Adgrf5 provided by MGI
Official Full Name	adhesion G protein-coupled receptor F5 provided byMGI
Primary source	MGI:MGI:2182928
See related	Ensembl:ENSMUSG00000056492
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	8430401C09Rik, 9330185D23, AI528491, Gpr116, mKIAA0758
Expression	Biased expression in lung adult (RPKM 73.9), subcutaneous fat pad adult (RPKM 17.7) and 7 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

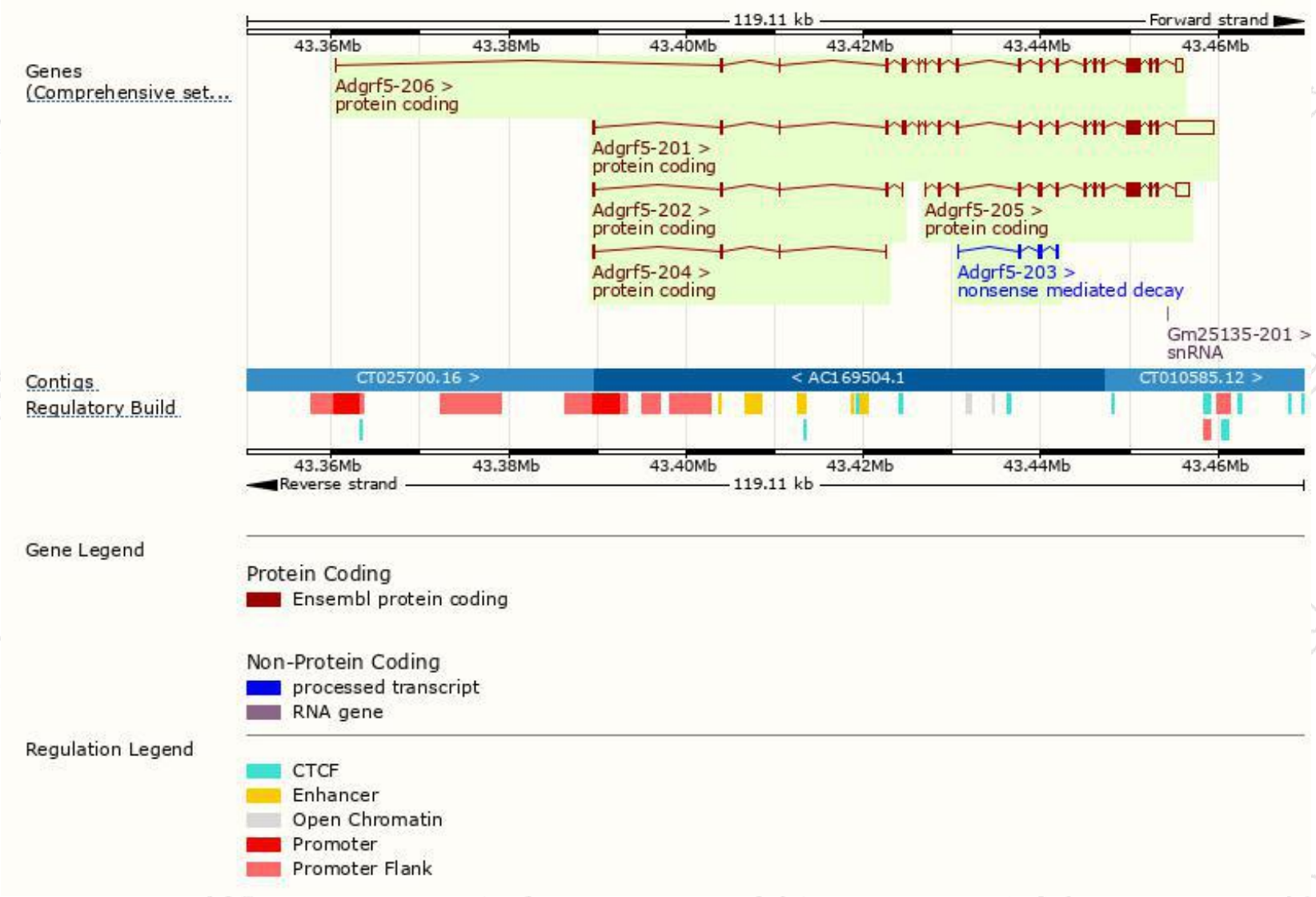
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adgrf5-201	ENSMUST00000113599.1	8535	1348aa	Protein coding	CCDS37622	G5E8Q8	TSL:5 GENCODE basic APPRIS P1
Adgrf5-206	ENSMUST00000226087.1	4954	1348aa	Protein coding	CCDS37622	G5E8Q8	GENCODE basic APPRIS P1
Adgrf5-205	ENSMUST00000225962.1	4868	1143aa	Protein coding	-	A0A286YDT5	CDS 5' incomplete
Adgrf5-202	ENSMUST00000224278.1	698	149aa	Protein coding	-	A0A286YCD3	CDS 3' incomplete
Adgrf5-204	ENSMUST00000225466.1	491	82aa	Protein coding	-	A0A286YE42	CDS 3' incomplete
Adgrf5-203	ENSMUST00000225004.1	830	142aa	Nonsense mediated decay	-	A0A286YD74	CDS 5' incomplete

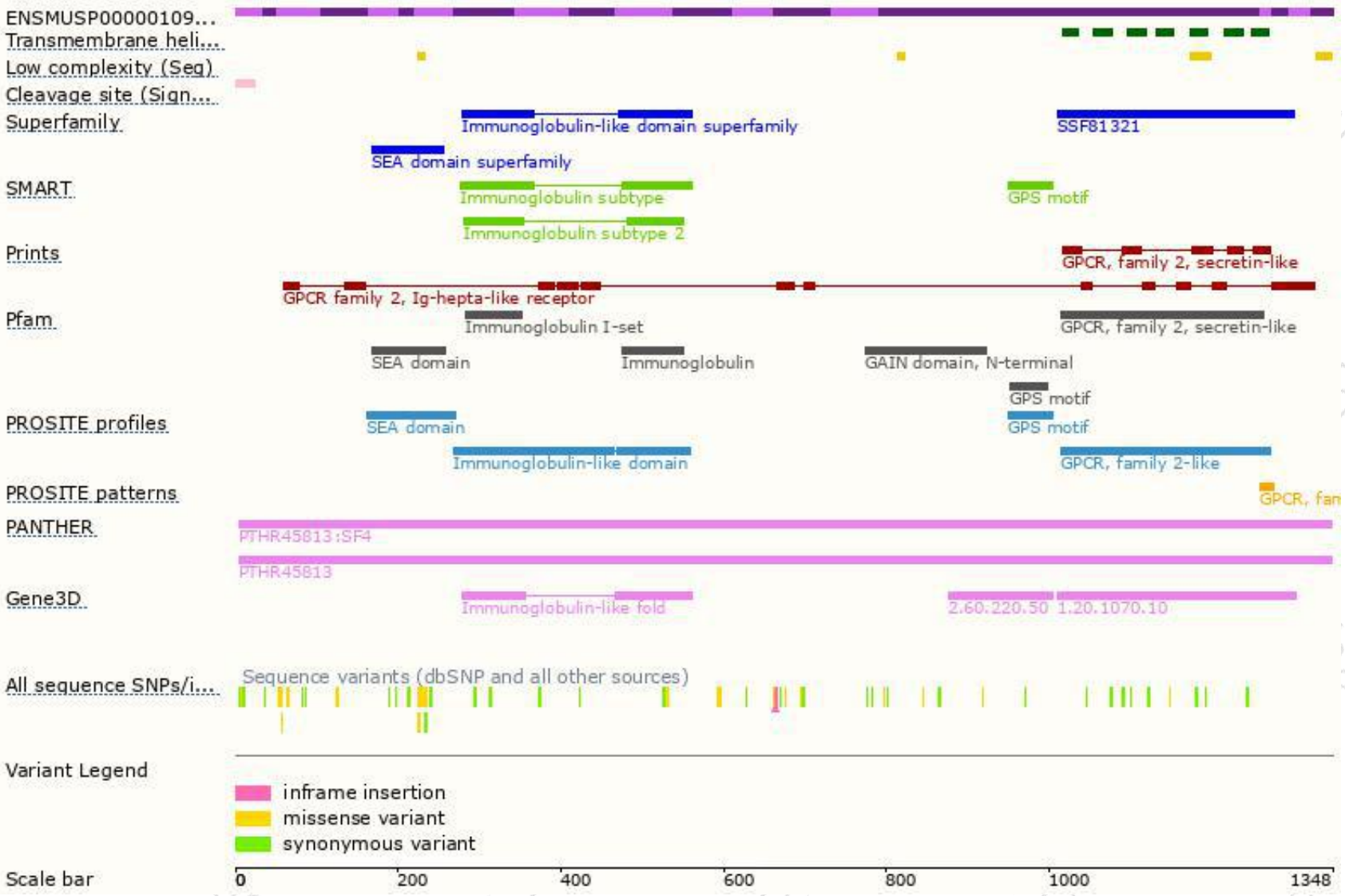
The strategy is based on the design of *Adgrf5-201* transcript,The transcription is shown below



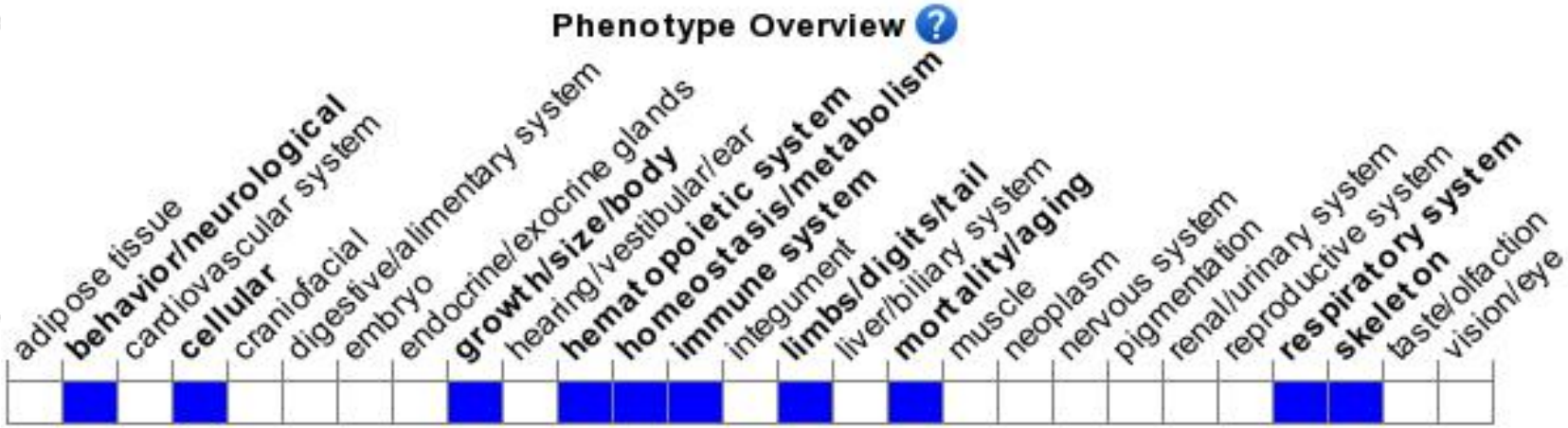
Genomic location distribution



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 knock-out allele exhibit premature death, decreased body weight and respiratory distress associated with pulmonary alveolar proteinosis.

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