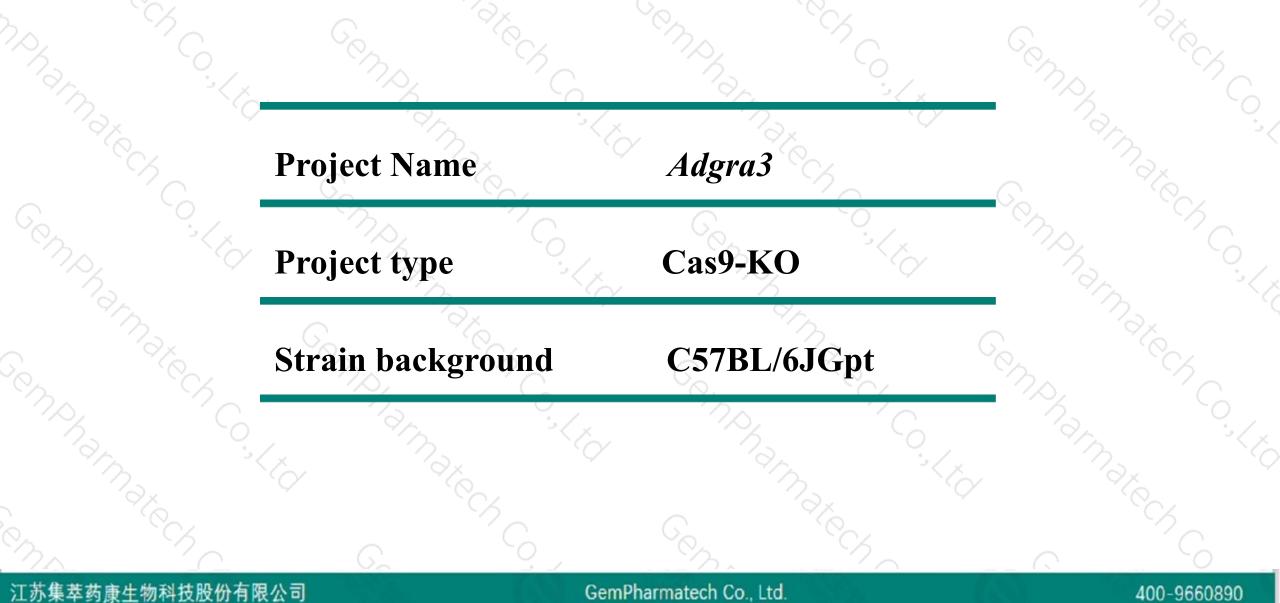


Adgra3 Cas9-KO Strategy

Designer: Design Date: Huan Wang 2019-7-22

Project Overview

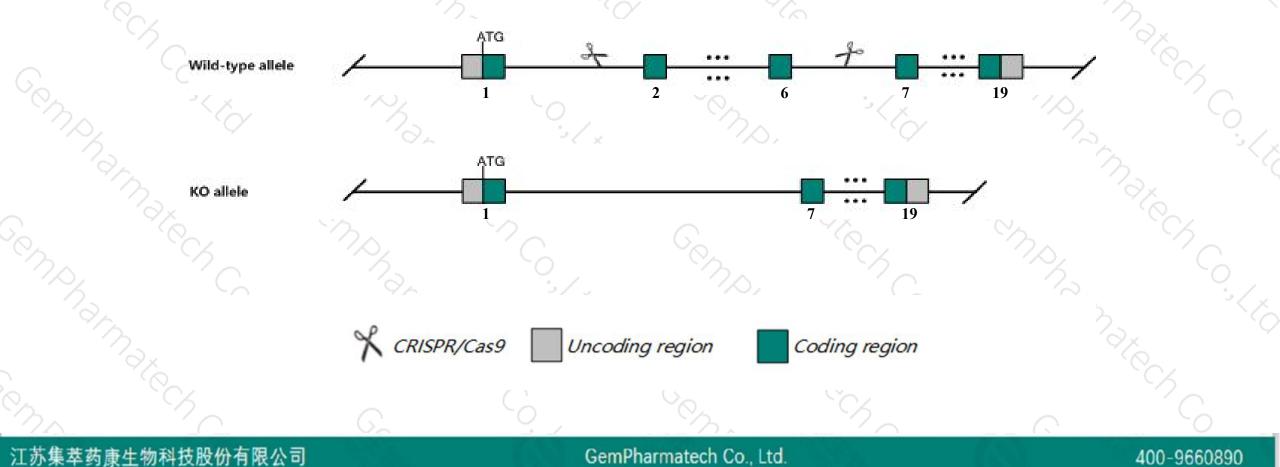




Knockout strategy



This model will use CRISPR/Cas9 technology to edit the Adgra3 gene. The schematic diagram is as follows:





- The Adgra3 gene has 7 transcripts. According to the structure of Adgra3 gene, exon2-exon6 of Adgra3-201 (ENSMUST00000030971.6) transcript is recommended as the knockout region. The region contains 449bp coding sequence. Knock out the region will result in disruption of protein function.
- > In this project we use CRISPR/Cas9 technology to modify Adgra3 gene. The brief process is as follows: CRISPR/Cas9 system

- > According to the existing MGI data, Homozygous mutant mice are fertile and grossly normal.
- The Adgra3 gene is located on the Chr5. 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.

Notice

Gene information (NCBI)



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Adgra3 adhesion G protein-coupled receptor A3 [Mus musculus (house mouse)]

Gene ID: 70693, updated on 31-Jan-2019

Summary

Official Symbol	Adgra3 provided by MGI
Official Full Name	adhesion G protein-coupled receptor A3 provided by MGI
Primary source	MGI:MGI:1917943
See related	Ensembl:ENSMUSG0000029090
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	3830613O22Rik, AU044632, Gpr125, Tem5-like
Expression	Ubiquitous expression in limb E14.5 (RPKM 32.5), ovary adult (RPKM 24.3) and 27 other tissues See more
Orthologs	human all

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Transcript information (Ensembl)



The gene has 7 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adgra3-201	ENSMUST00000030971.6	4480	<u>1310aa</u>	Protein coding	CCDS51500	<u>Q7TT36</u>	TSL:1 GENCODE basic APPRIS P1
Adgra3-205	ENSMUST00000198818.1	797	No protein	Processed transcript	ē	. 8 .	TSL:3
Adgra3-202	ENSMUST00000196177.1	543	No protein	Processed transcript	5	8 4	TSL:5
Adgra3-204	ENSMUST00000196915.4	396	No protein	Processed transcript	-	<u></u>	TSL:3
Adgra3-206	ENSMUST00000198868.1	2991	No protein	Retained intron	ā	67	TSL:NA
Adgra3-207	ENSMUST00000199132.1	314	No protein	Retained intron	÷	. 8 7	TSL:3
Adgra3-203	ENSMUST00000196229.1	215	No protein	Retained intron	2	3 4	TSL:1

The strategy is based on the design of Adgra3-201 transcript, The transcription is shown below

< Adgra3-201 protein coding

Reverse strand

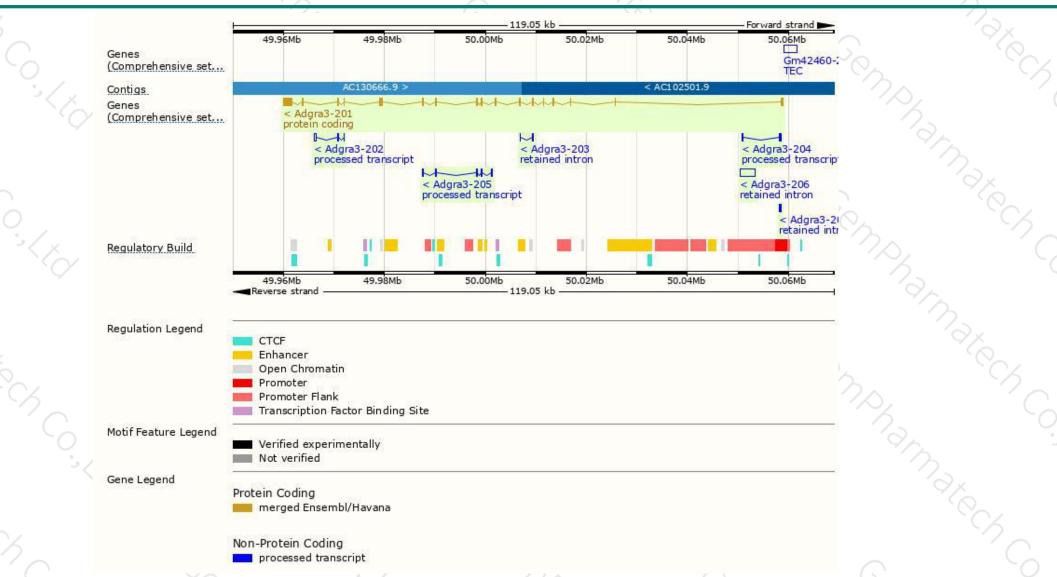
- 99.05 kb -

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Genomic location distribution





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Protein domain



SC.	ENSMUSP00000030 Transmembrane heli MobiDB lite	
	Low complexity (Seg) Conserved Domains	
	Cleavage site (Sign	
	hmmpanther	PTHR12011:SF35
		PTHR12011
2 8	Superfamily domains	SSF52 058 GPCR family 2, extracellular hormone receptor domain superfamily
		Immunoglobulin-like domain superfamily
	SMART domains	Leucine-rich repeat, typical subtype GPS motif
<u> </u>		Cysteine-rich flanking region, C-terminal
~ ~		
	Pfam domain	
		Immunoglobulin I-set GPCR, family 2, secretin-like
	PROSITE profiles	Immunoglobulin-like domain GPS motif
		Leucine-rich repeat GPS motif Immunoglobulin I-set GPCR, family 2, secretin-like Immunoglobulin-like domain GPS motif Leucine-rich repeat GPCR, family 2, extracellular hormone receptor domain
		GPCR, family 2-like
	Gene3D	Leucine-rich repeat domain superfamily 2.60.220.50
		Immunoglobulin-like fold
		GPCR: family 2, extracellular hormone receptor domain superfamily
	All sequence SNPs/i	Sequence variants (dbSNP and all other sources)
	Variant Legend	
		inframe deletion
		missense variant splice region variant
		synonymous variant
1 6	Scale bar	0 200 400 600 800 1000 1310 O
40 TH 40 DT 4		

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If you have any questions, you are welcome to inquire. Tel: 400-9660890



