

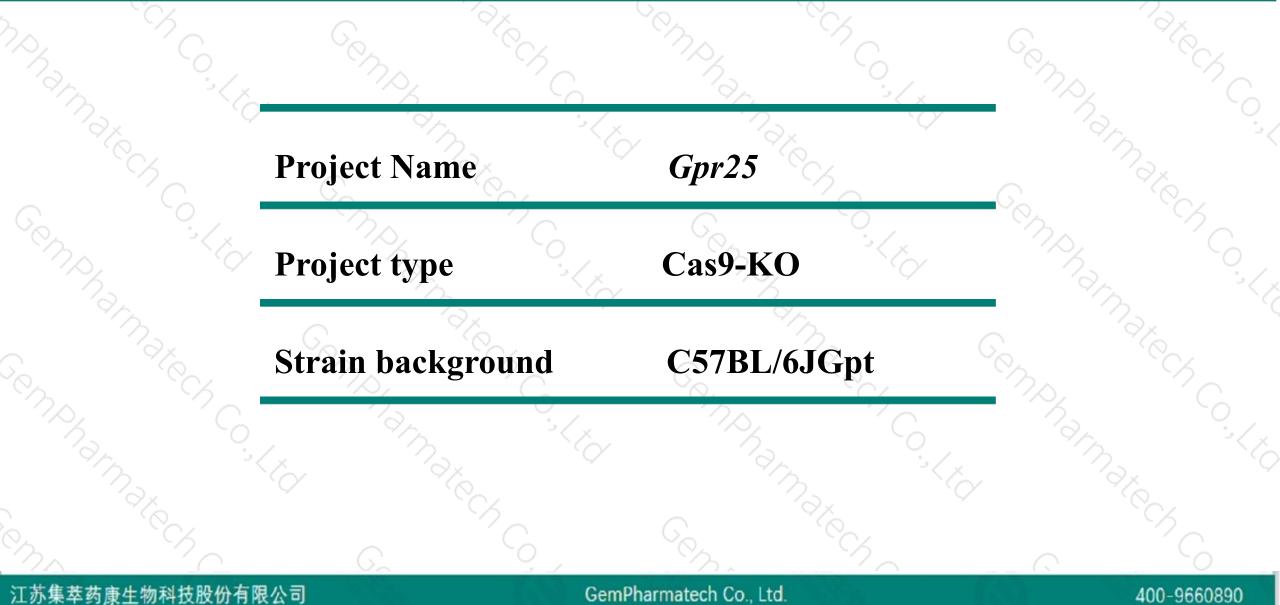
Gpr25 Cas9-KO Strategy

Designer: Xueting Zhang Design Date: 2019-8-5

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Project Overview

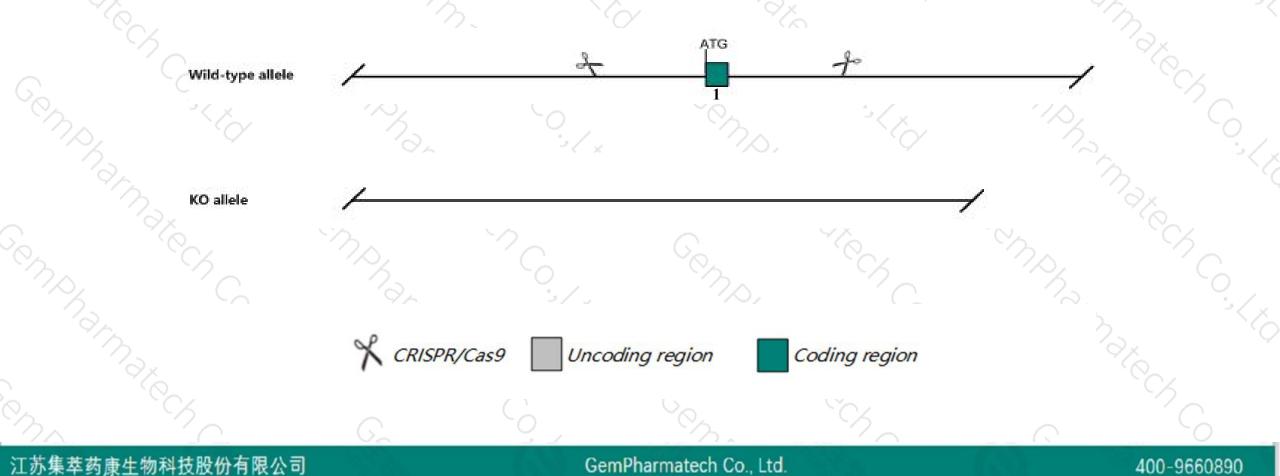




Knockout strategy



This model will use CRISPR/Cas9 technology to edit the Gpr25 gene. The schematic diagram is as follows:





- The Gpr25 gene has 1 transcript. According to the structure of Gpr25 gene, exon1 of Gpr25-201 (ENSMUST00000086395.6) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- > In this project we use CRISPR/Cas9 technology to modify Gpr25 gene. The brief process is as follows: CRISPR/Cas9 system



- > Gm26781 gene will be deleted together in this strategy.
- The knockout region is near to the N-terminal of Gm37552 gene, this strategy may influence the regulatory function of the N-terminal of Gm37552 gene.
- The *Gpr25* gene is located on the Chr1. 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)



Gpr25 G protein-coupled receptor 25 [Mus musculus (house mouse)]

Gene ID: 383563, updated on 19-Mar-2019

Summary

Official Symbol	Gpr25 provided by MGI
Official Full Name	G protein-coupled receptor 25 provided by MGI
Primary source	MGI:MGI:2686146
See related	Ensembl:ENSMUSG00000052759
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	Gm1300
Orthologs	human all

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Transcript information (Ensembl)



The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gpr25-201	ENSMUST0000086395.6	1077 <u>358aa</u>		Protein coding	CCDS48381	P0C511	TSL:NA GENCODE basic APPRIS P1
The strategy	r is based on the design of	Gpr25	-201 tran	script The tran	scription is s	hown belo	Central Centra
Gpr25-201 protein coding		. 27	чг. Э	1.08 kb	· /)_	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
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Genomic location distribution



21.08 kb Forward strand 136.26Mb 136.3 136.27Mb ----Genes Comprehensive set... A430034D21Rik-201 > Gm26781-201 > antisense AC124550.4 > Contigs 10 Genes < Gm37552-201 < Gpr25-201 protein coding < Camsap2-201 (Comprehensive set... **lincRNA** protein coding < Camsap2-206 protein coding < Camsapa protein coc Regulatory Build 136.25Mb 136.26Mb 136.27Mb -21.08 kb Reverse strand **Regulation Legend** Enhancer Promoter Promoter Flank Motif Feature Legend Verified experimentally Not verified Gene Legend Protein Coding Ensembl protein coding merged Ensembl/Havana Non-Protein Coding processed transcript

RNA gene

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Protein domain



2	ENSMUSP00000083 Transmembrane heli Low complexity (Seg) hmmpanther	PTHR24228				-			-		_	20.
	Superfamily domains Prints domain Pfam domain	100	in-coupled recep	2000		_	_		_		12	
	PROSITE profiles PROSITE patterns Gene3D		PCR, rhodopsin-l	ike, 7TM		eptor, rhodopsin-	like				1	
2	All sequence SNPs/i Variant Legend	Sequence variants	dbSNP and all	other source	s)	1.11.1	<u>II</u>	a.	11	I.		
	Scale bar	synonymous v	80	120	160	200	240	280			358	

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



