

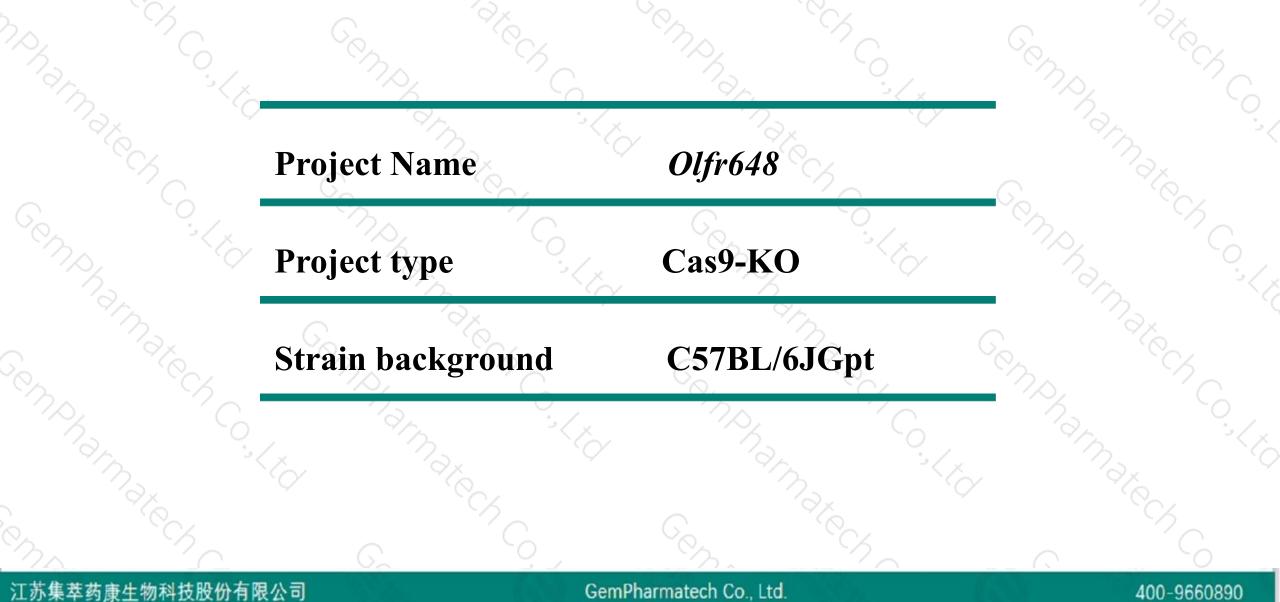
Olfr648 Cas9-KO Strategy

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

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Project Overview

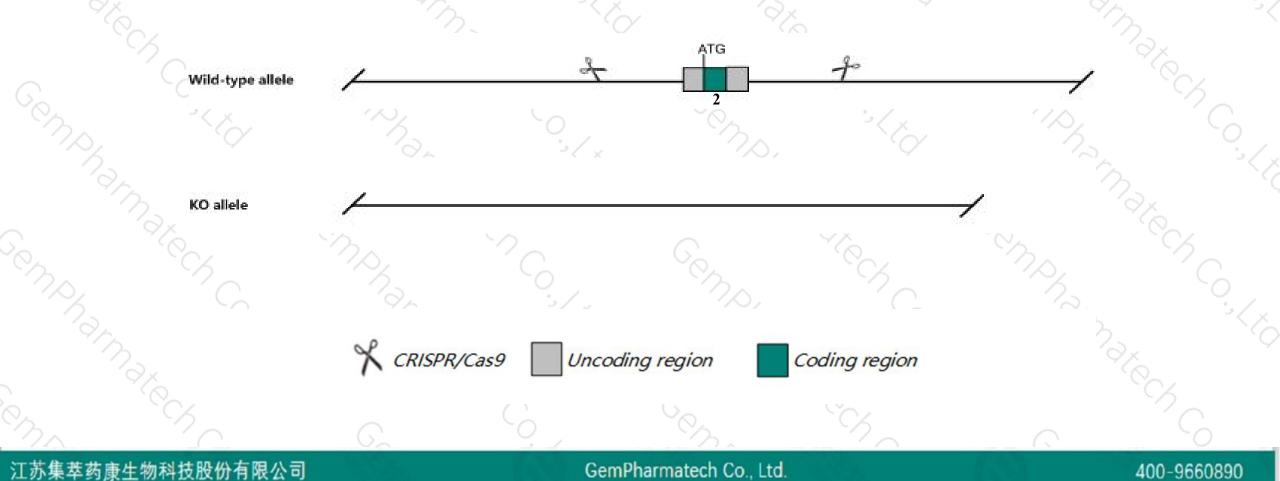




Knockout strategy



This model will use CRISPR/Cas9 technology to edit the Olfr648 gene. The schematic diagram is as follows:





- The Olfr648 gene has 2 transcripts. According to the structure of Olfr648 gene, exon2 of Olfr648-202 (ENSMUST00000216612.2) 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 Olfr648 gene. The brief process is as follows: CRISPR/Cas9 syste



- The knockout region is near to the N-terminal of Olfr647 gene, this strategy may influence the regulatory function of the N-terminal of Olfr647 gene.
- The Olfr648 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.

Notice

Gene information (NCBI)



Olfr648 olfactory receptor 648 [Mus musculus (house mouse)]

Gene ID: 258746, updated on 19-Feb-2019

Summary

Official Symbol Olfr648 provided by MGI Official Full Name olfactory receptor 648 provided by MGI MGI:MGI:3030482 Primary source See related Ensembl:ENSMUSG00000042909 Gene type protein coding RefSeg status PROVISIONAL Organism Mus musculus Lineage Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus Also known as MOR31-12 Summary Olfactory receptors interact with odorant molecules in the nose, to initiate a neuronal response that triggers the perception of a smell. The olfactory receptor proteins are members of a large family of G-protein-coupled receptors (GPCR) arising from single coding-exon genes. Olfactory receptors share a 7-transmembrane domain structure with many neurotransmitter and hormone receptors and are responsible for the recognition and G protein-mediated transduction of odorant signals. The olfactory receptor gene family is the largest in the genome. The nomenclature assigned to the olfactory receptor genes and proteins for this organism is independent of other organisms. [provided by RefSeq, Jul 2008] Orthologs human all

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Transcript information (Ensembl)



The gene has 2 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Olfr648-202	ENSMUST00000216612.2	2929	<u>316aa</u>	Protein coding	CCDS21613	<u>Q8VG19</u>	TSL:2 GENCODE basic APPRIS P1
Olfr648-201	ENSMUST0000052659.1	951	<u>316aa</u>	Protein coding	CCDS21613	<u>Q8VG19</u>	TSL:NA GENCODE basic APPRIS P1

The strategy is based on the design of Olfr648-202 transcript, The transcription is shown below

< Olfr648-202 protein coding

Reverse strand -

5.79 kb

Genomic location distribution

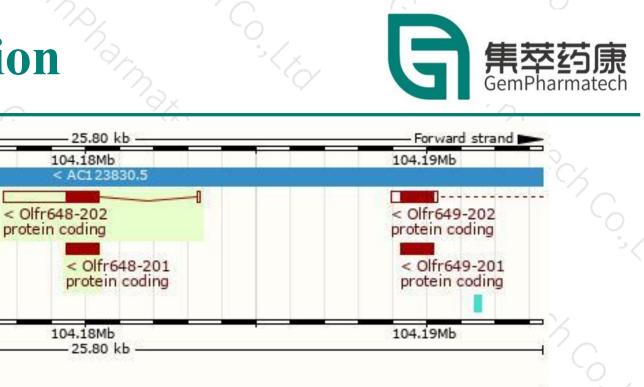
104.17Mb

< Olfr647-ps1-201

104.17Mb

Reverse strand

unprocessed pseudogene



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Regulation Legend

Regulatory Build

(Comprehensive set...

Contigs Genes

Motif Feature Legend

Gene Legend

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CTCF Enhancer Verified experimentally Not verified Protein Coding Ensembl protein coding

Non-Protein Coding

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Protein domain



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		PTHR26450;	SF123								
	Superfamily domains	SSF81321						17. J.C.	· ·		
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If you have any questions, you are welcome to inquire. Tel: 400-9660890



