

Olfr49 Cas9-KO Strategy

Designer: Yanhua Shen

Reviewer: Xueting Zhang

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Project Overview

Project Name

Olfr49

Project type

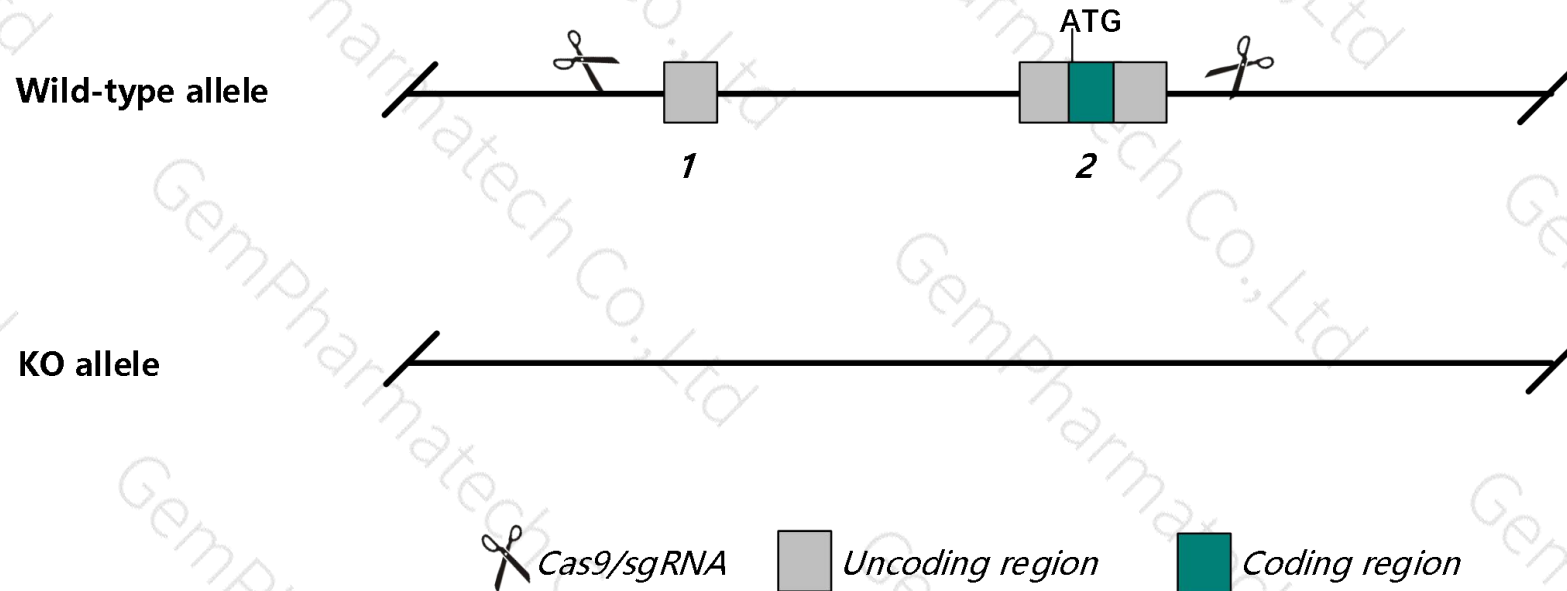
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Olfr49* gene. The schematic diagram is as follows:



- The *Olfr49* gene has 2 transcripts. According to the structure of *Olfr49* gene, exon1-exon2 of *Olfr49-202* (ENSMUST00000216214.1) 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 *Olfr49* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Olfr49* gene is located on the Chr14. 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)

Olfr49 olfactory receptor 49 [*Mus musculus* (house mouse)]

Gene ID: 18348, updated on 12-Aug-2019

Summary

Official Symbol	Olfr49 provided by MGI
Official Full Name	olfactory receptor 49 provided by MGI
Primary source	MGI:MGI:1333764
See related	Ensembl:ENSMUSG00000048153
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	IC6; MOR1181
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

Genomic context

Location: 14; 14 C2

Exon count: 1

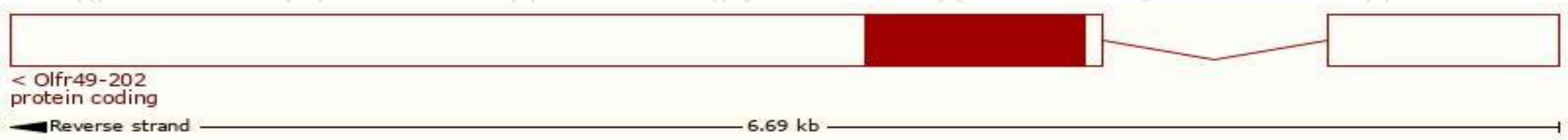
See Olfr49 in [Genome Data Viewer](#)

Transcript information (Ensembl)

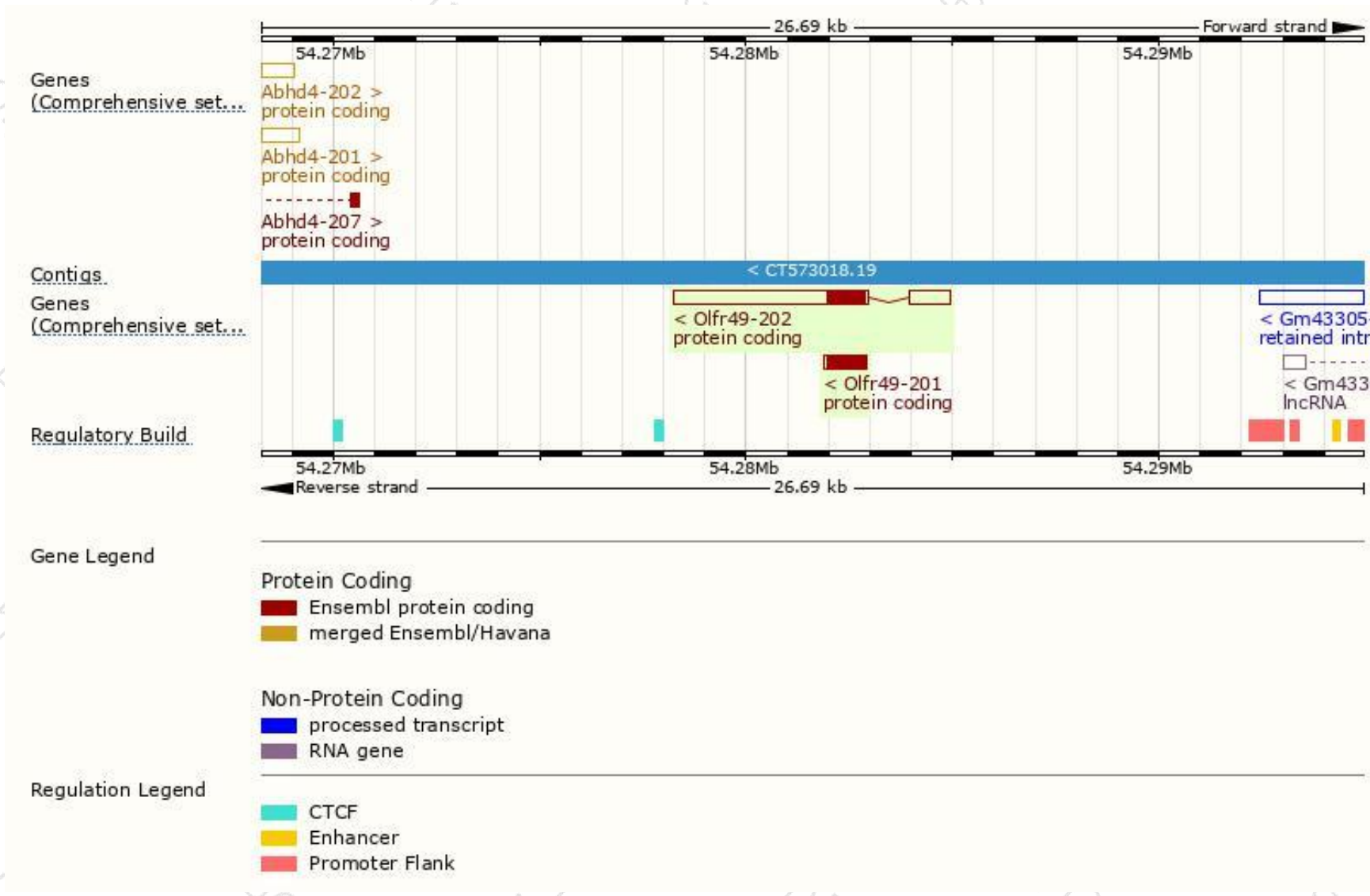
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Olfr49-202	ENSMUST00000216214.1	5717	313aa	Protein coding	CCDS27085	Q9Z1V0	TSL:5 GENCODE basic APPRIS P1
Olfr49-201	ENSMUST00000059996.6	1030	313aa	Protein coding	CCDS27085	Q9Z1V0	TSL:NA GENCODE basic APPRIS P1

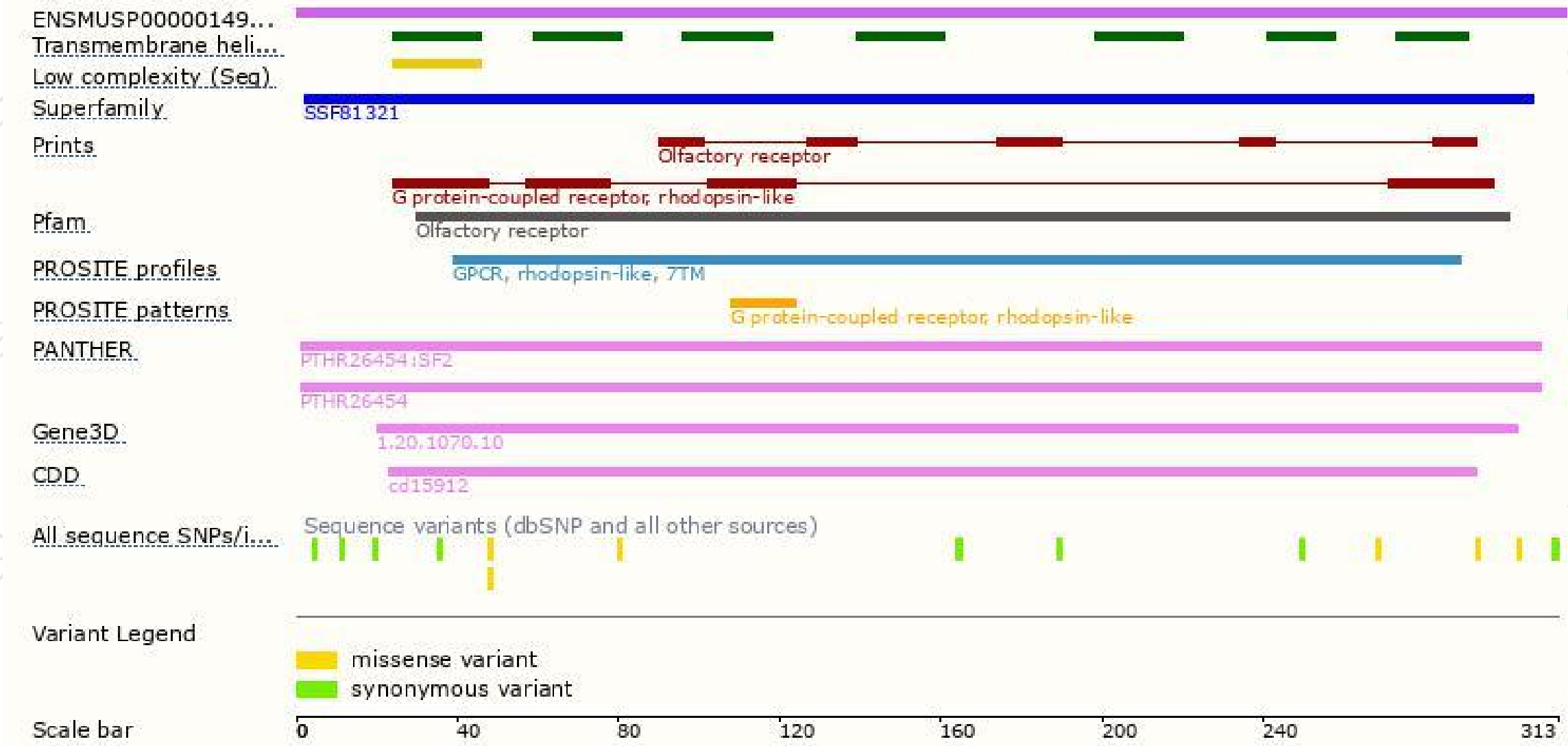
The strategy is based on the design of *Olfr49-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

