Taar5 Cas9-CKO Strategy

Designer: Xiaojing Li
Design Date: 2019-8-15

集萃药康 GemPharmatech

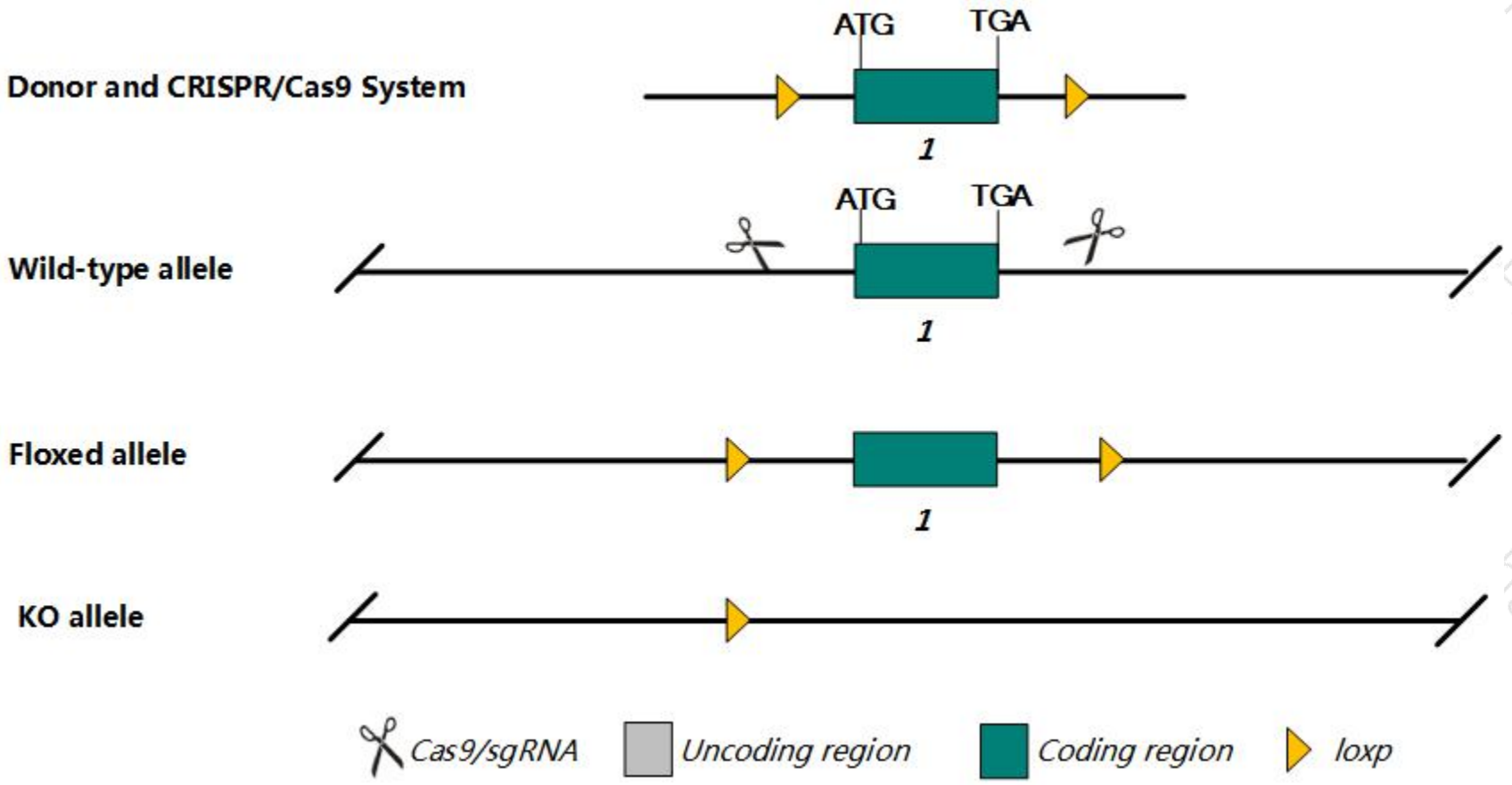
Project Overview

Project Name	***Taar5***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

集萃药康 GemPharmatech

This model will use CRISPR/Cas9 technology to edit the *Taar5* gene. The schematic diagram is as follows:



Technical routes

集萃药康 GemPharmatech

- The *Taar5* gene has 1 transcript. According to the structure of *Taar5* gene, exon1 of *Taar5-201* (ENSMUST00000092659.3) transcript is recommended as the knockout region.The region contains all coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Taar5* gene. The brief process is as follows:gRNA was transcribed in vitro, donor was constructed.Cas9, gRNA and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice.Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.

- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit abnormal olfactory system physiology.

- The *Taar5* gene is located on the Chr10. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information （NCBI）

集萃药康 GemPharmatech

Taar5 trace amine-associated receptor 5 [*Mus musculus* (house mouse)]

Gene ID: 215854, updated on 12-Aug-2019

Summary

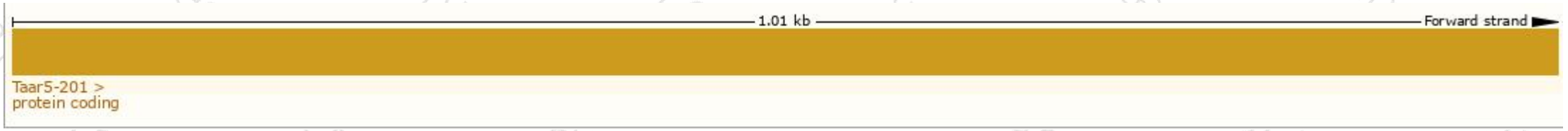
Official Symbol	Taar5 provided by MGI
Official Full Name	trace amine-associated receptor 5 provided by MGI
Primary source	MGI:MGI:2685073
See related	Ensembl:ENSMUSG00000069706
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm227; taR-5
Orthologs	human all

Transcript information（Ensembl）

The gene has 1 transcript,all transcripts are shown below:

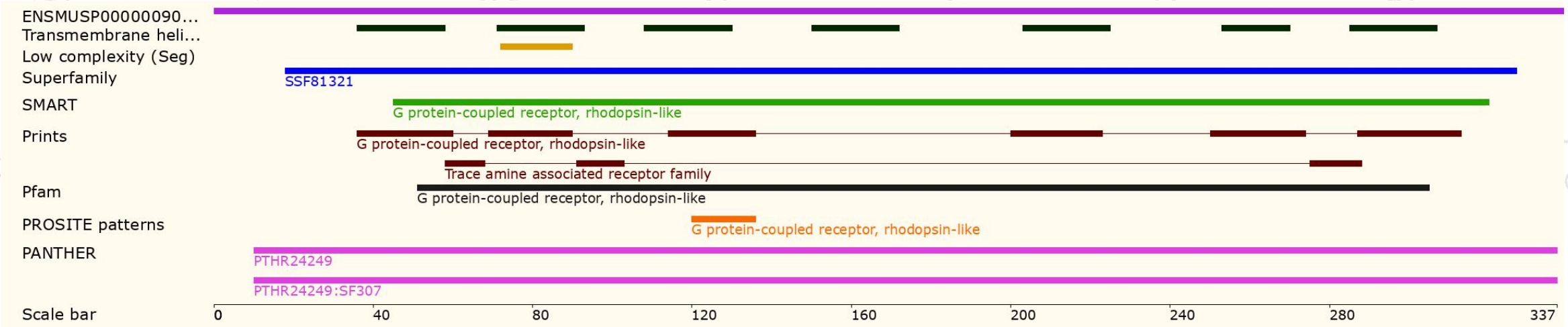
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Taar5-201	ENSMUST00000092659.3	1014	337aa	Protein coding	CCDS23738	B2RTA0 Q5QD14	TSL:NA GENCODE basic APPRIS P1

The strategy is based on the design of *Taar5-201* transcript,The transcription is shown below

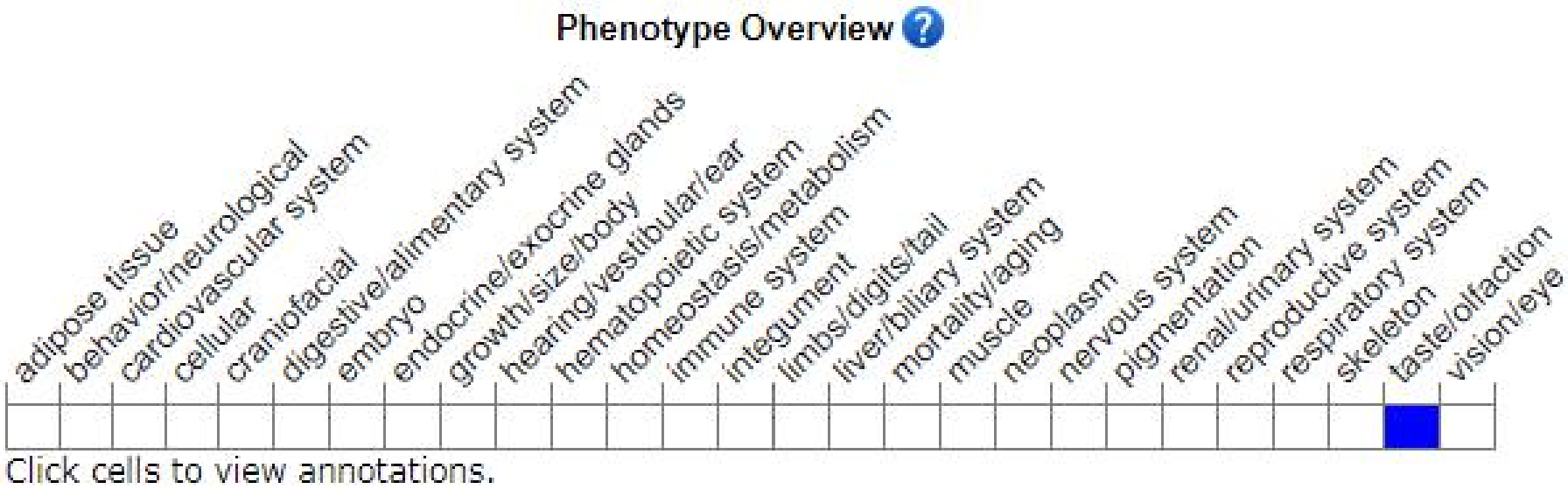


Genomic location distribution

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/).

Mice homozygous for a knock-out allele exhibit abnormal olfactory system physiology.

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