Osgep Cas9-CKO Strategy

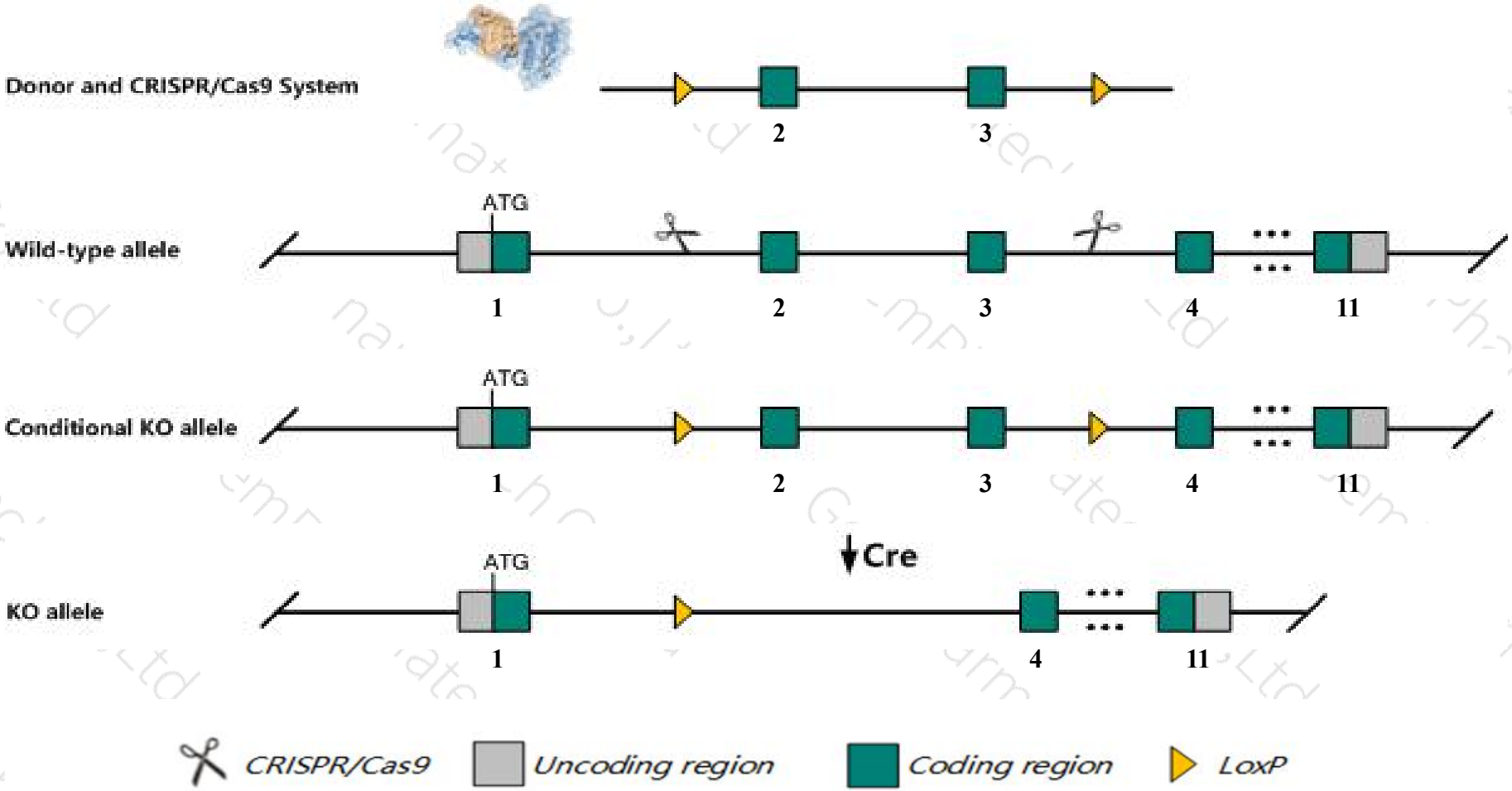
Designer: QiongZhou

Project Overview

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

Conditional Knockout strategy

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



Technical routes

- The *Osgep* gene has 8 transcripts. According to the structure of *Osgep* gene, exon2-exon3 of *Osgep-202* (ENSMUST00000159292.7) transcript is recommended as the knockout region.The region contains 296bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Osgep* gene. The brief process is as follows:CRISPR/Cas9 system 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

- The *Osgep* 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 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

Osgep O-sialoglycoprotein endopeptidase [Mus musculus (house mouse)]

Gene ID: 66246, updated on 31-Jan-2019

Summary

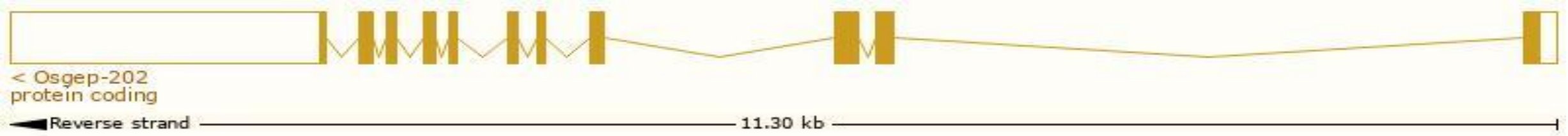
Official Symbol	Osgep provided by MGI
Official Full Name	O-sialoglycoprotein endopeptidase provided by MGI
Primary source	MGI:MGI:1913496
See related	Ensembl:ENSMUSG00000006289
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1500019L24Rik, GCPL-1, PRSMG1
Expression	Ubiquitous expression in ovary adult (RPKM 44.1), adrenal adult (RPKM 34.5) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

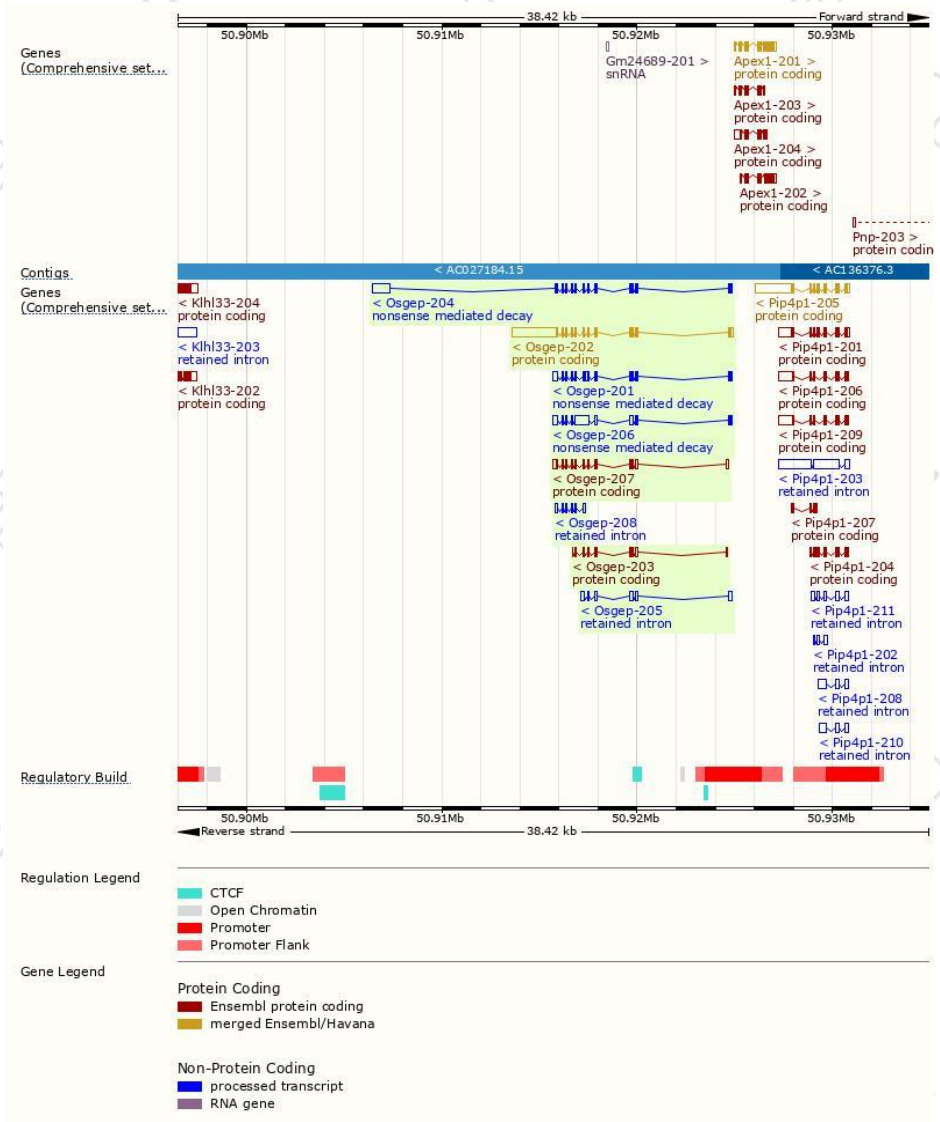
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Osgep-202	ENSMUST00000159292.7	3388	335aa	Protein coding	CCDS27026	A0A0R4J1Y3	TSL:1 GENCODE basic APPRIS P1
Osgep-207	ENSMUST00000162177.7	1219	254aa	Protein coding	-	E0CYN9	TSL:1 GENCODE basic
Osgep-203	ENSMUST00000160375.7	713	156aa	Protein coding	-	E0CYK9	CDS 3' incomplete TSL:5
Osgep-204	ENSMUST00000160393.7	2004	335aa	Nonsense mediated decay	-	A0A0R4J1Y3	TSL:1
Osgep-206	ENSMUST00000160890.7	1812	80aa	Nonsense mediated decay	-	E0CXW7	TSL:2
Osgep-201	ENSMUST00000006452.12	1308	186aa	Nonsense mediated decay	-	E9QMF4	TSL:5
Osgep-205	ENSMUST00000160464.1	839	No protein	Retained intron	-	-	TSL:2
Osgep-208	ENSMUST00000162850.1	586	No protein	Retained intron	-	-	TSL:2

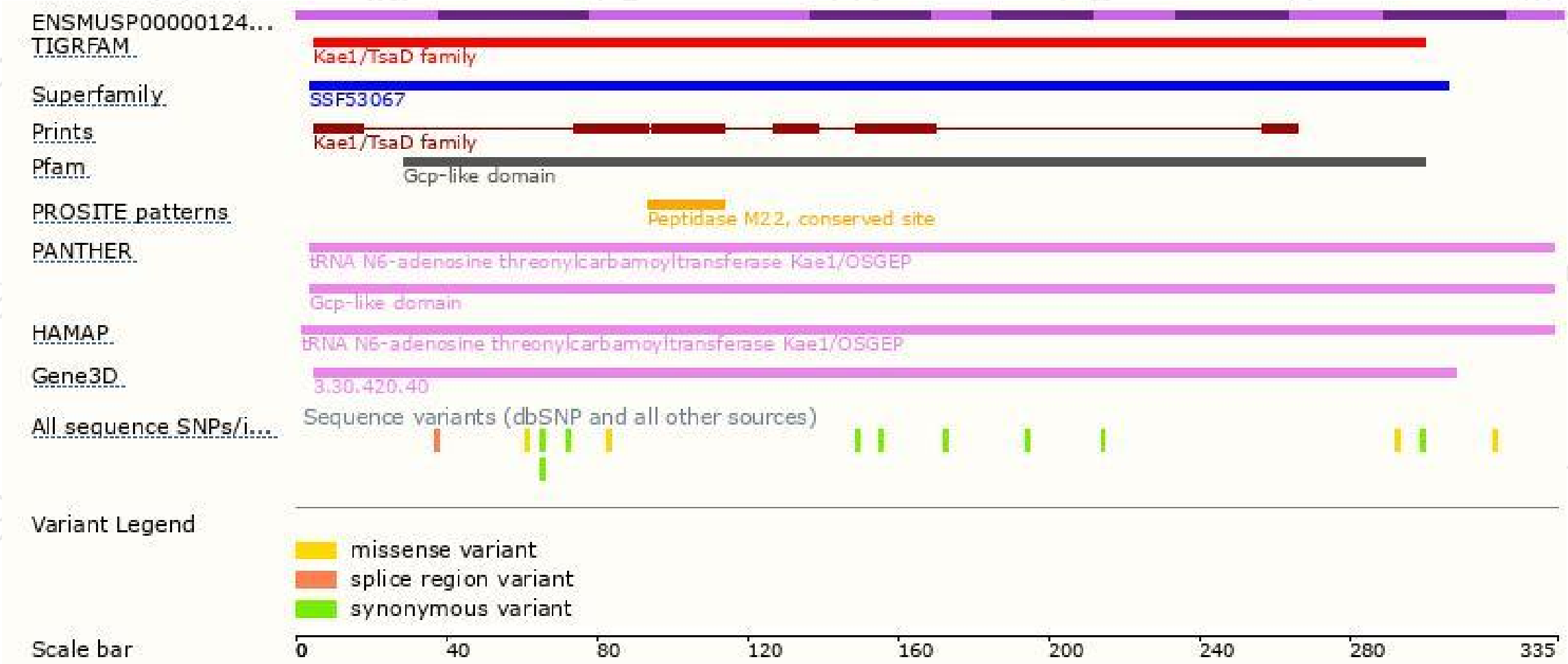
The strategy is based on the design of *Osgep-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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