

Os9 Cas9-CKO Strategy

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Project Overview

Project Name

Os9

Project type

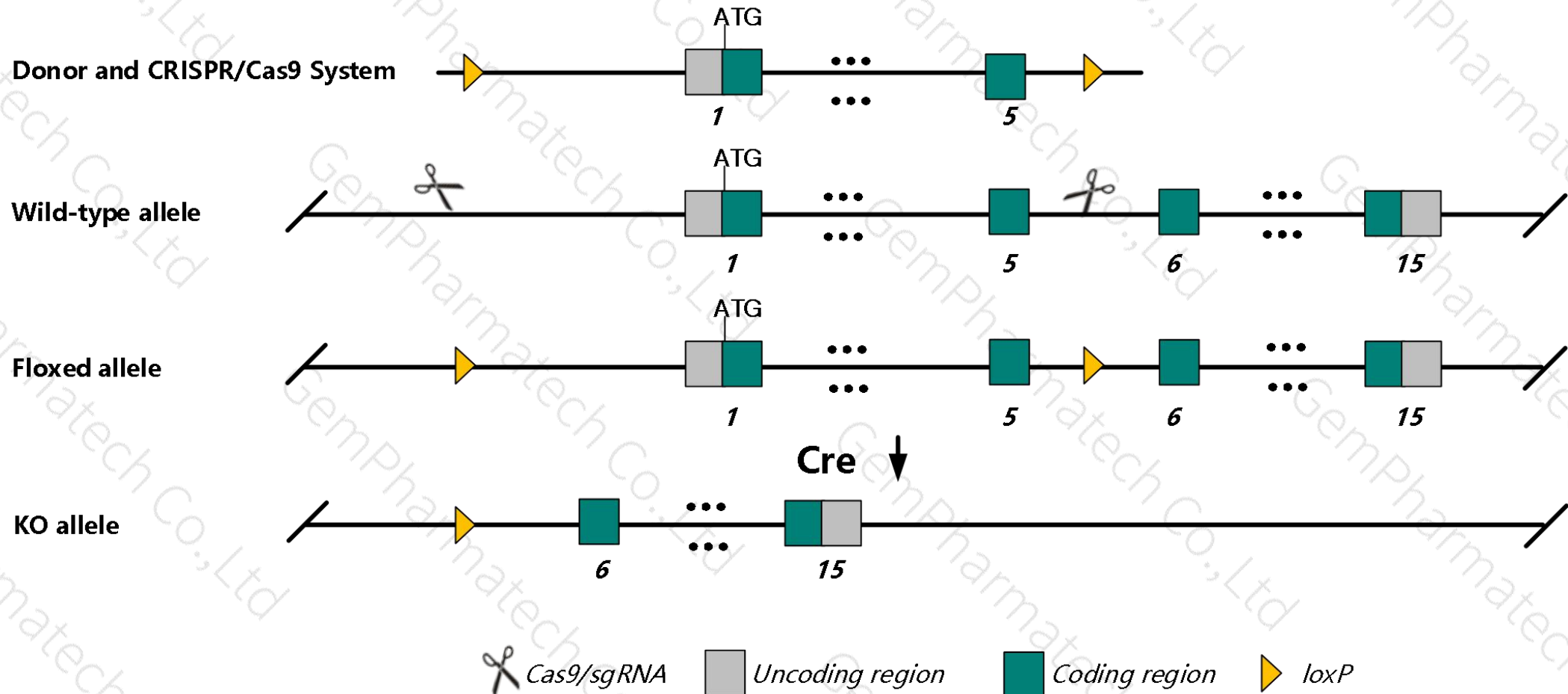
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Os9* gene. The schematic diagram is as follows:



Technical routes

- The *Os9* gene has 3 transcripts. According to the structure of *Os9* gene, exon1-exon5 of *Os9*-202 (ENSMUST00000164259.8) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Os9* 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 Os9 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)

Os9 amplified in osteosarcoma [*Mus musculus* (house mouse)]

Gene ID: 216440, updated on 13-Mar-2020

Summary

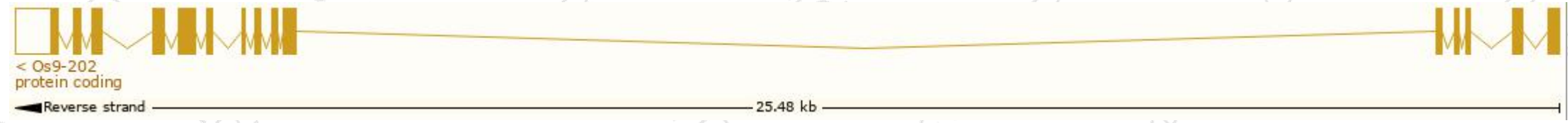
Official Symbol	Os9 provided by MGI
Official Full Name	amplified in osteosarcoma provided by MGI
Primary source	MGI:MGI:1924301
See related	Ensembl:ENSMUSG00000040462
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AU022351; 4632413K17Rik
Expression	Ubiquitous expression in duodenum adult (RPKM 33.8), liver adult (RPKM 33.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

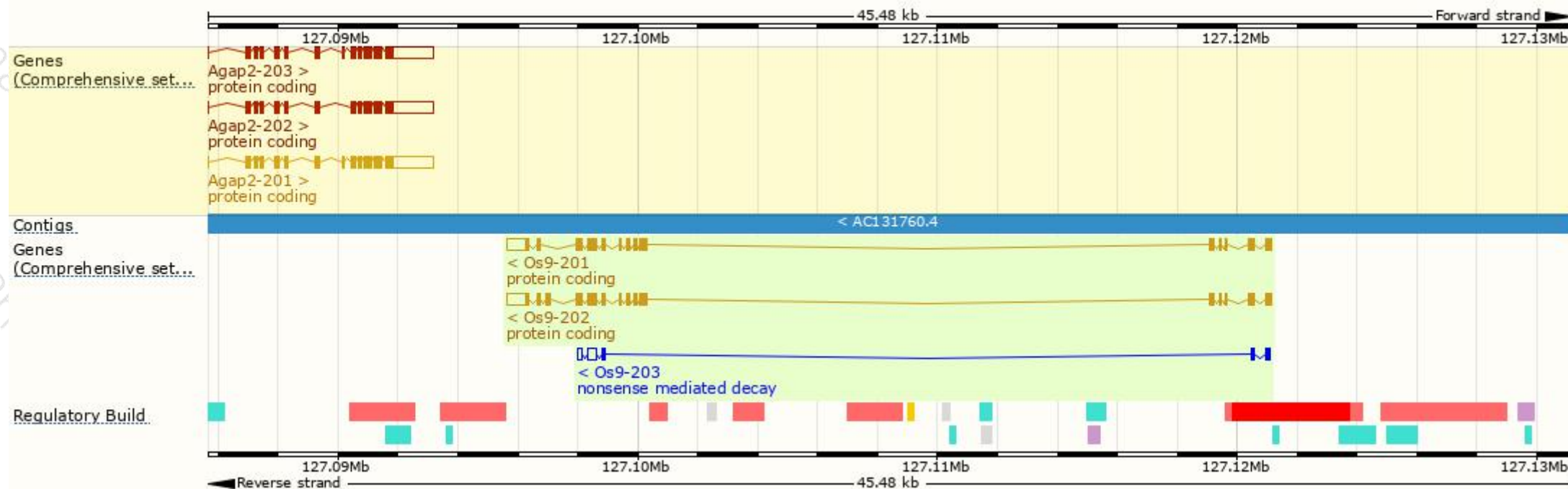
The gene has 3 transcripts, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Os9-202	ENSMUST00000164259.8	2627	672aa	Protein coding	CCDS48713	Q8K2C7	TSL:1 GENCODE basic APPRIS ALT2
Os9-201	ENSMUST00000080975.5	2458	617aa	Protein coding	CCDS24229	Q8K2C7	TSL:1 GENCODE basic APPRIS P3
Os9-203	ENSMUST00000218798.1	723	96aa	Nonsense mediated decay	-	A0A1W2P6Z8	CDS 5' incomplete TSL:3

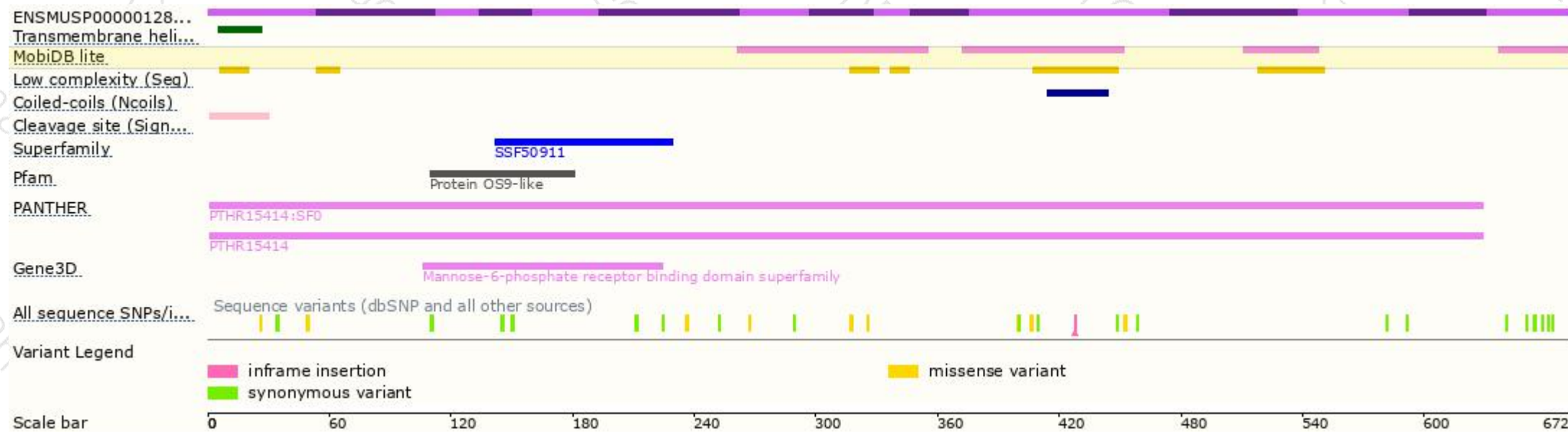
The strategy is based on the design of *Os9-202* transcript, The transcription is shown below



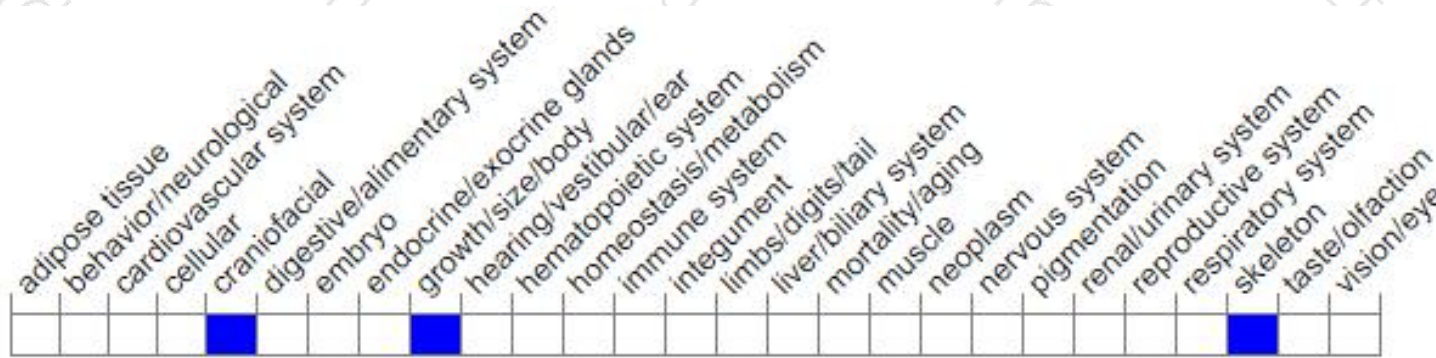
Genomic location distribution



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/>).

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

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