

Angptl7 Cas9-CKO Strategy

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Reviewer :

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Project Overview

Project Name

Angptl7

Project type

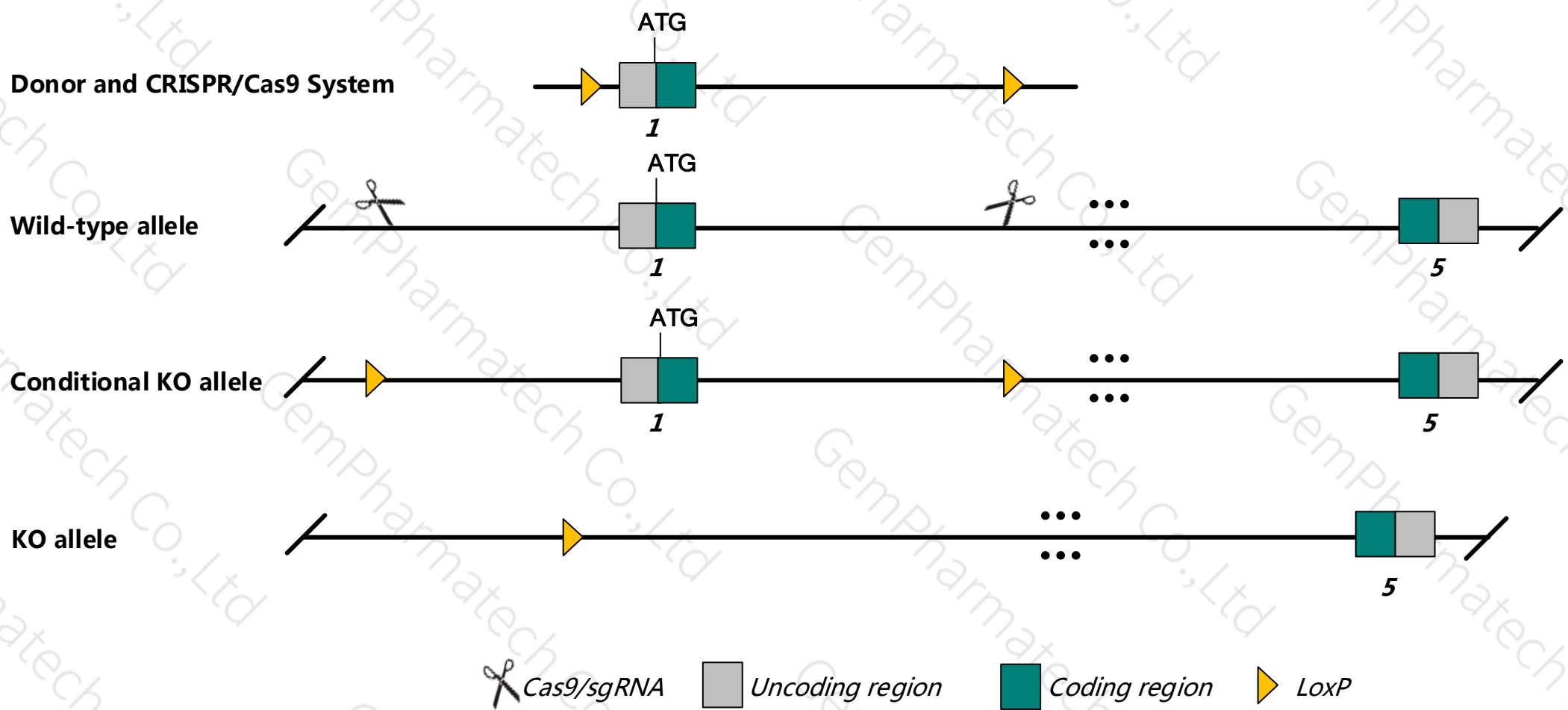
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Angptl7* gene. The schematic diagram is as follows:



- The *Angptl7* gene has 1 transcript. According to the structure of *Angptl7* gene, exon1 of *Angptl7*-201 (ENSMUST00000030840.3) 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 *Angptl7* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues or cell types.

- The target gene coincides with the Mtor gene, except that some introns of the Mtor gene are knocked out together, and the effect is unknown.
- The *Angptl7* gene is located on the Chr4. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Angptl7 angiotensin-like 7 [*Mus musculus* (house mouse)]

Gene ID: 654812, updated on 12-Aug-2019

Summary

Official Symbol	Angptl7 provided by MGI
Official Full Name	angiotensin-like 7 provided by MGI
Primary source	MGI:MGI:3605801
See related	Ensembl:ENSMUSG00000028989
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
Expression	Biased expression in kidney adult (RPKM 6.5), bladder adult (RPKM 4.1) and 12 other tissues See more
Orthologs	human all

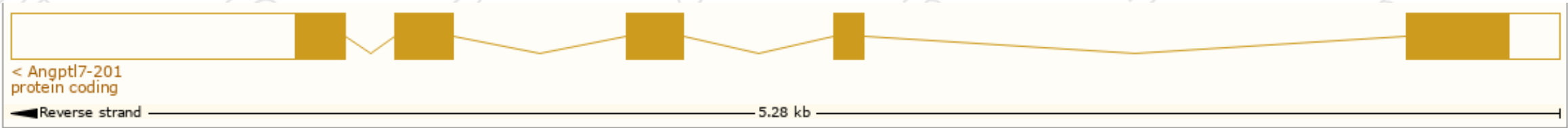
Transcript information (Ensembl)



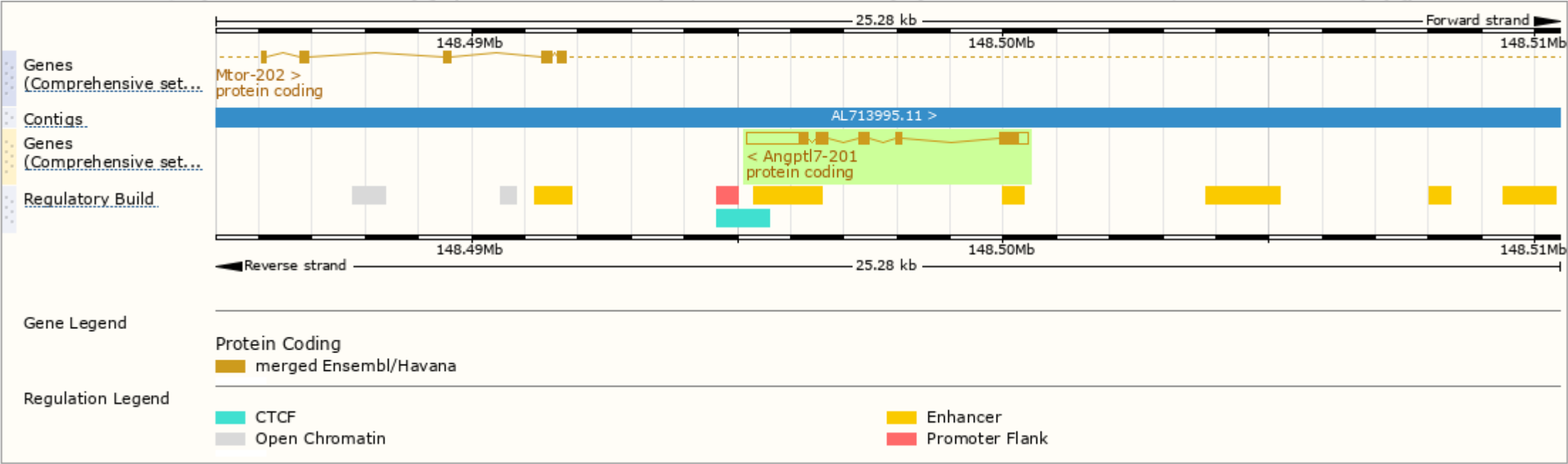
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Angptl7-201	ENSMUST00000030840.3	2157	337aa	Protein coding	CCDS18938	Q8R1Q3	TSL:1 Gencode basic APPRIS P1

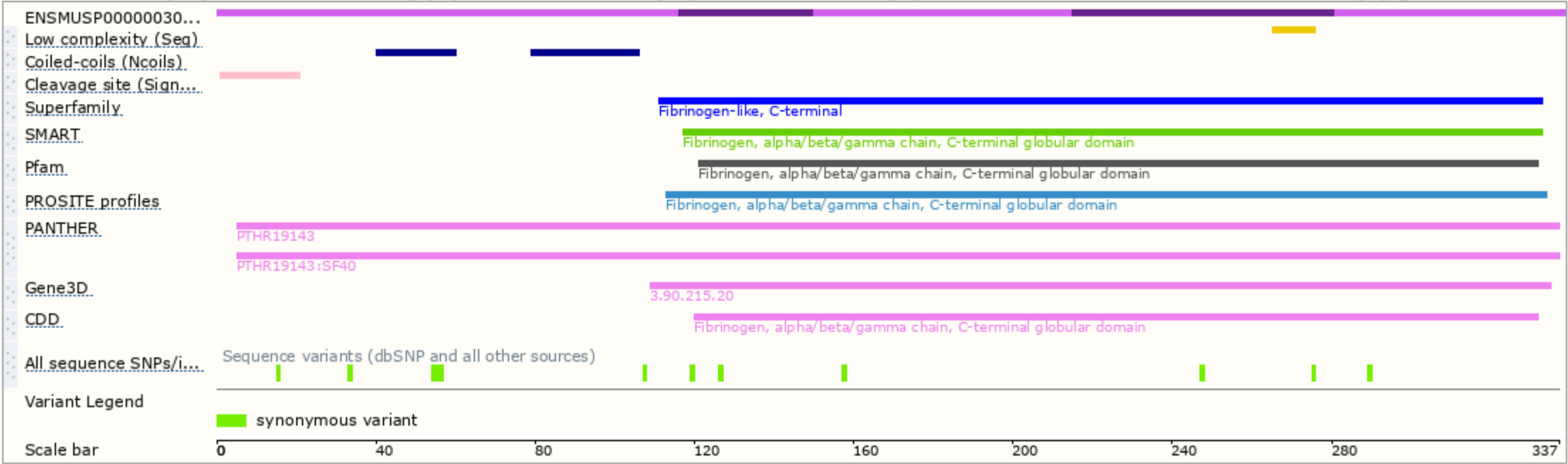
The strategy is based on the design of *Angptl7*-201 transcript, The transcription is shown below



Genomic location distribution



Protein domain



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