Atf7ip2 Cas9-CKO Strategy

Designer: Rui Xiong

Reviewer: Shilei Zhu

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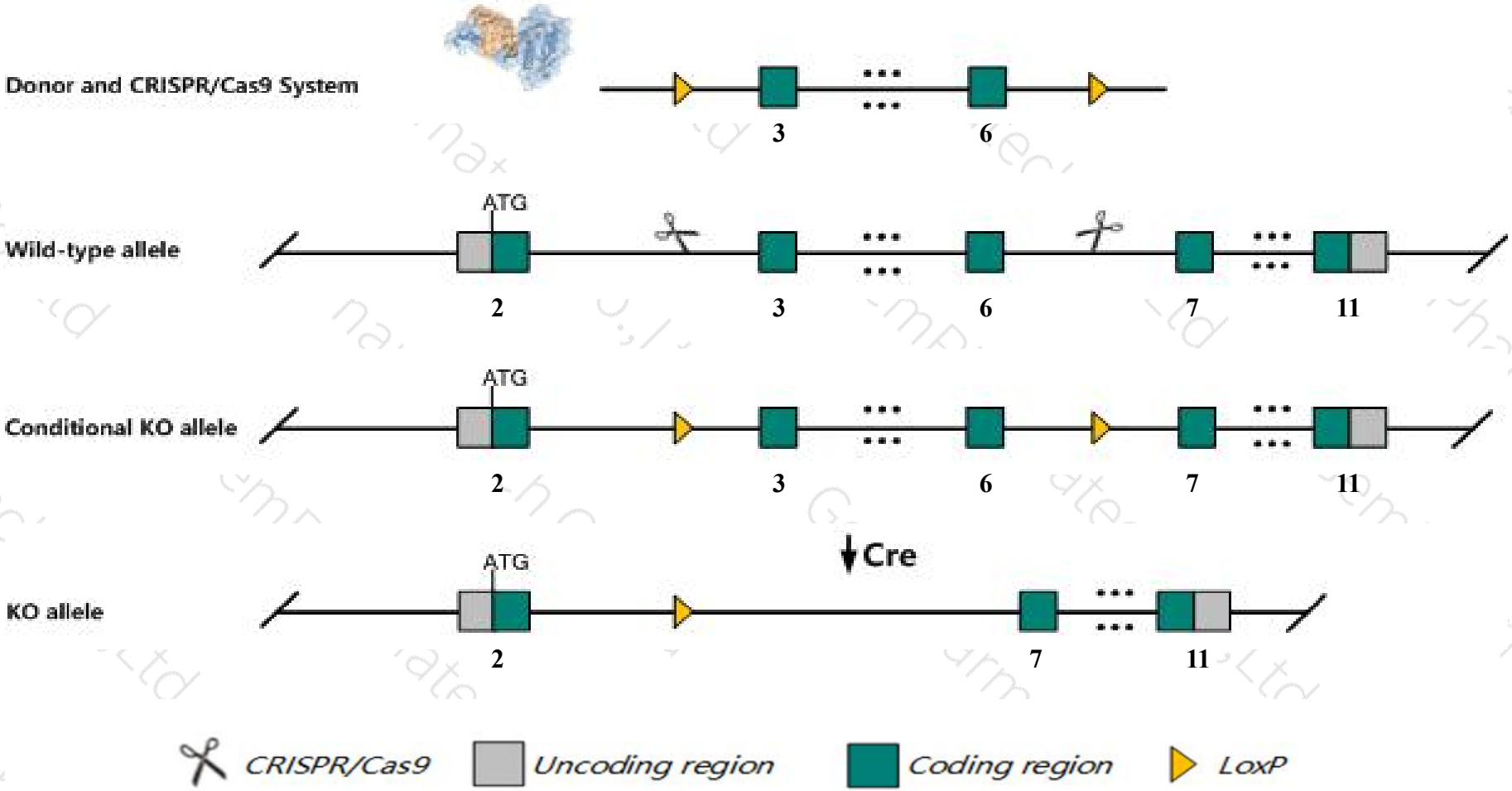
Project Overview

Project Name	***Atf7ip2***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atf7ip2* gene. The schematic diagram is as follows:



Technical routes

- The *Atf7ip2* gene has 6 transcripts. According to the structure of *Atf7ip2* gene, exon3-exon6 of *Atf7ip2-201* (ENSMUST00000044005.13) transcript is recommended as the knockout region.The region contains 514bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Atf7ip2* 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

- Gm49455-201 gene may be destroyed.
- The *Atf7ip2* gene is located on the Chr16. 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

Atf7ip2 activating transcription factor 7 interacting protein 2 [Mus musculus (house mouse)]

Gene ID: 75329, updated on 13-Mar-2020

Summary

Official Symbol	Atf7ip2 provided by MGI
Official Full Name	activating transcription factor 7 interacting protein 2 provided byMGI
Primary source	MGI:MGI:1922579
See related	Ensembl:ENSMUSG00000039200
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	4930558K11Rik, BC018510, Get-1, PSM2
Expression	Biased expression in testis adult (RPKM 1.2), placenta adult (RPKM 0.6) and 5 other tissuesSee more
Orthologs	human all

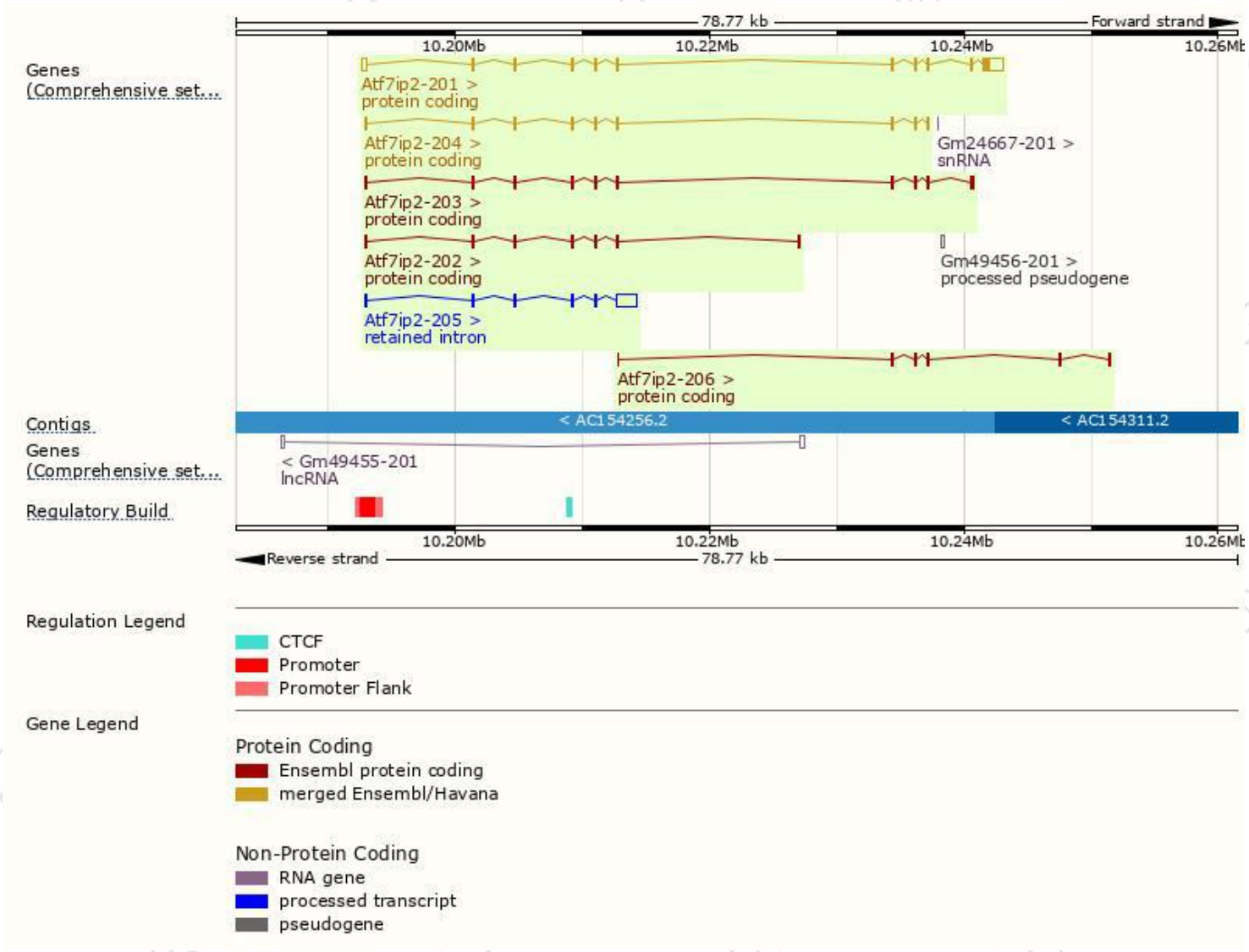
Transcript information（Ensembl）

The gene has 6 transcripts,all transcripts are shown below:

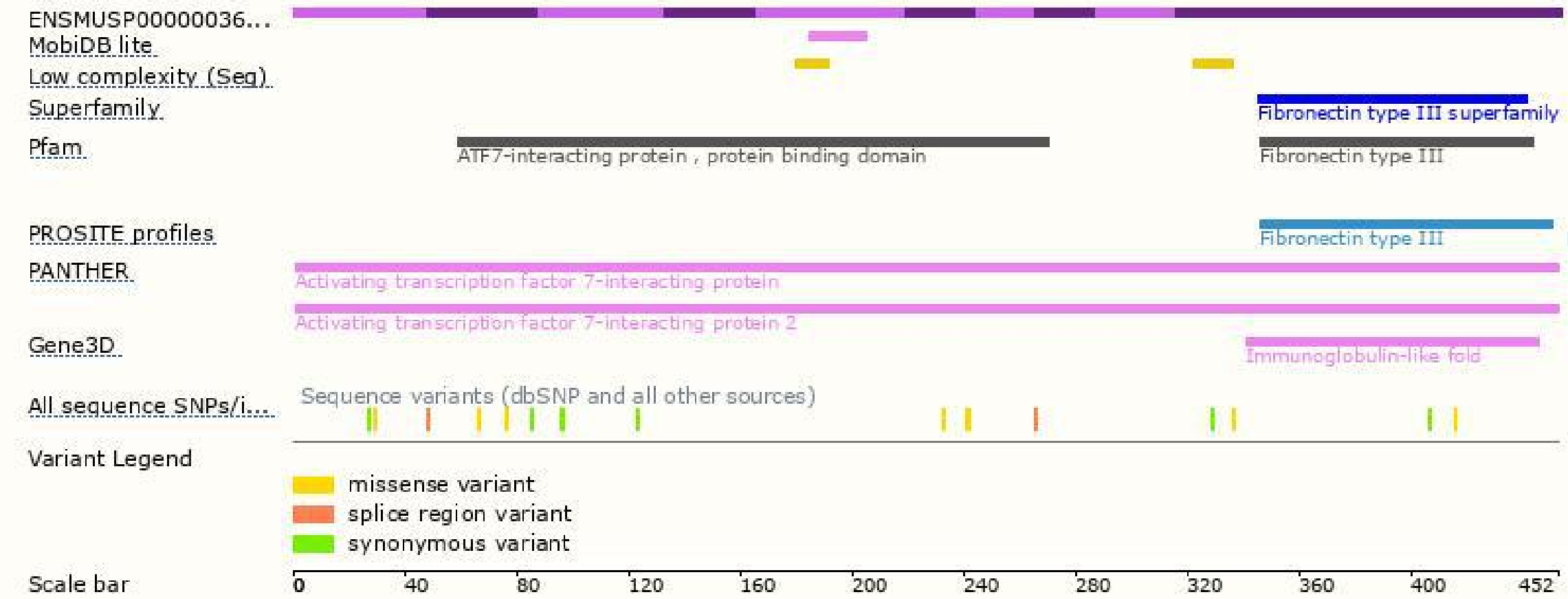
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atf7ip2-201	ENSMUST00000044005.13	2778	452aa	Protein coding	CCDS49758	Q3UL97	TSL:1 GENCODE basic APPRIS P1
Atf7ip2-204	ENSMUST00000119023.7	1048	300aa	Protein coding	CCDS49759	Q3UL97	TSL:1 GENCODE basic
Atf7ip2-203	ENSMUST00000117220.7	1230	319aa	Protein coding	-	Q3UL97	TSL:1 GENCODE basic
Atf7ip2-202	ENSMUST00000100191.3	889	225aa	Protein coding	-	Q3UL97	TSL:1 GENCODE basic
Atf7ip2-206	ENSMUST00000230872.1	465	133aa	Protein coding	-	A0A2R8W6K8	CDS 5' incomplete
Atf7ip2-205	ENSMUST00000133674.1	2166	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Atf7ip2-201* transcript,the transcription is shown below:

Genomic location distribution



Protein domain



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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd