Taf3 Cas9-CKO Strategy

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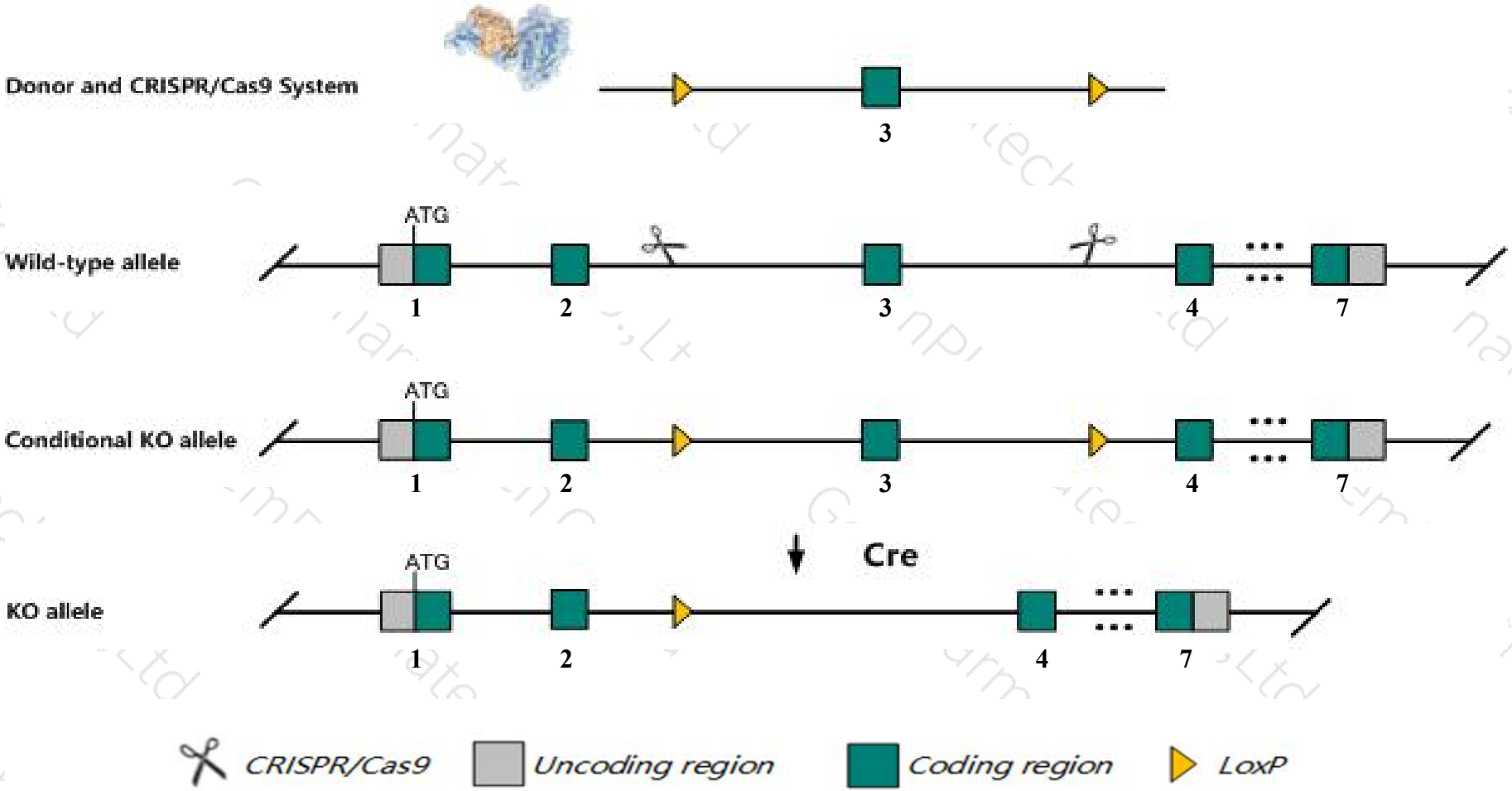
Project Overview

Project Name	***Taf3***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Taf3* gene. The schematic diagram is as follows:



Technical routes

- The *Taf3* gene has 5 transcripts. According to the structure of *Taf3* gene, exon3 of *Taf3-201* (ENSMUST00000026888.10) transcript is recommended as the knockout region.The region contains 1832bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Taf3* 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 *Taf3* gene is located on the Chr2. 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.

➢ *Taf3-202* and *Taf3-203* transcripts may not be affect.

➢ 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）

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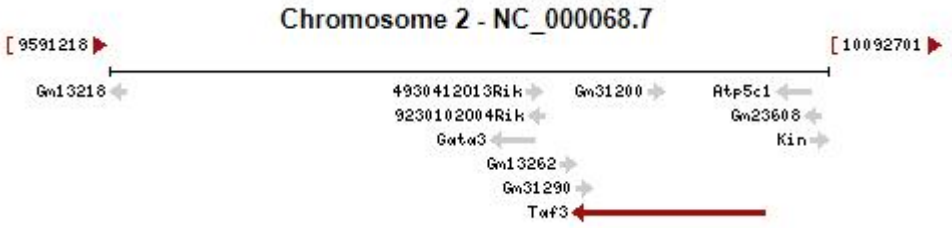
Taf3 TATA-box binding protein associated factor 3 [*Mus musculus* (house mouse)]

Gene ID: 209361, updated on 12-Aug-2019

Summary

Official Symbol	Taf3 provided by MGI
Official Full Name	TATA-box binding protein associated factor 3 provided by MGI
Primary source	MGI:MGI:2388097
See related	Ensembl:ENSMUSG00000025782
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	140kDa; TAF140; AW539625; TAFII140; TAFII-140; mTAFII140; 4933439M23Rik
Expression	Ubiquitous expression in bladder adult (RPKM 3.3), testis adult (RPKM 3.1) and 28 other tissues See more
Orthologs	human all

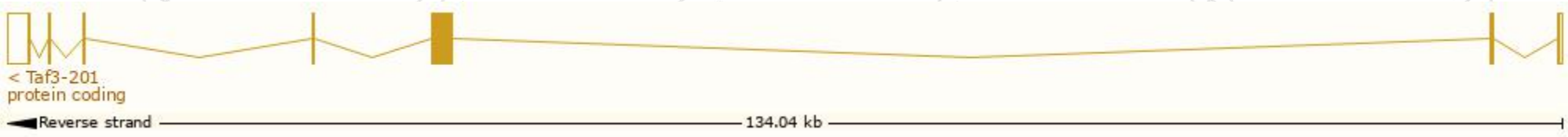


Transcript information（Ensembl）

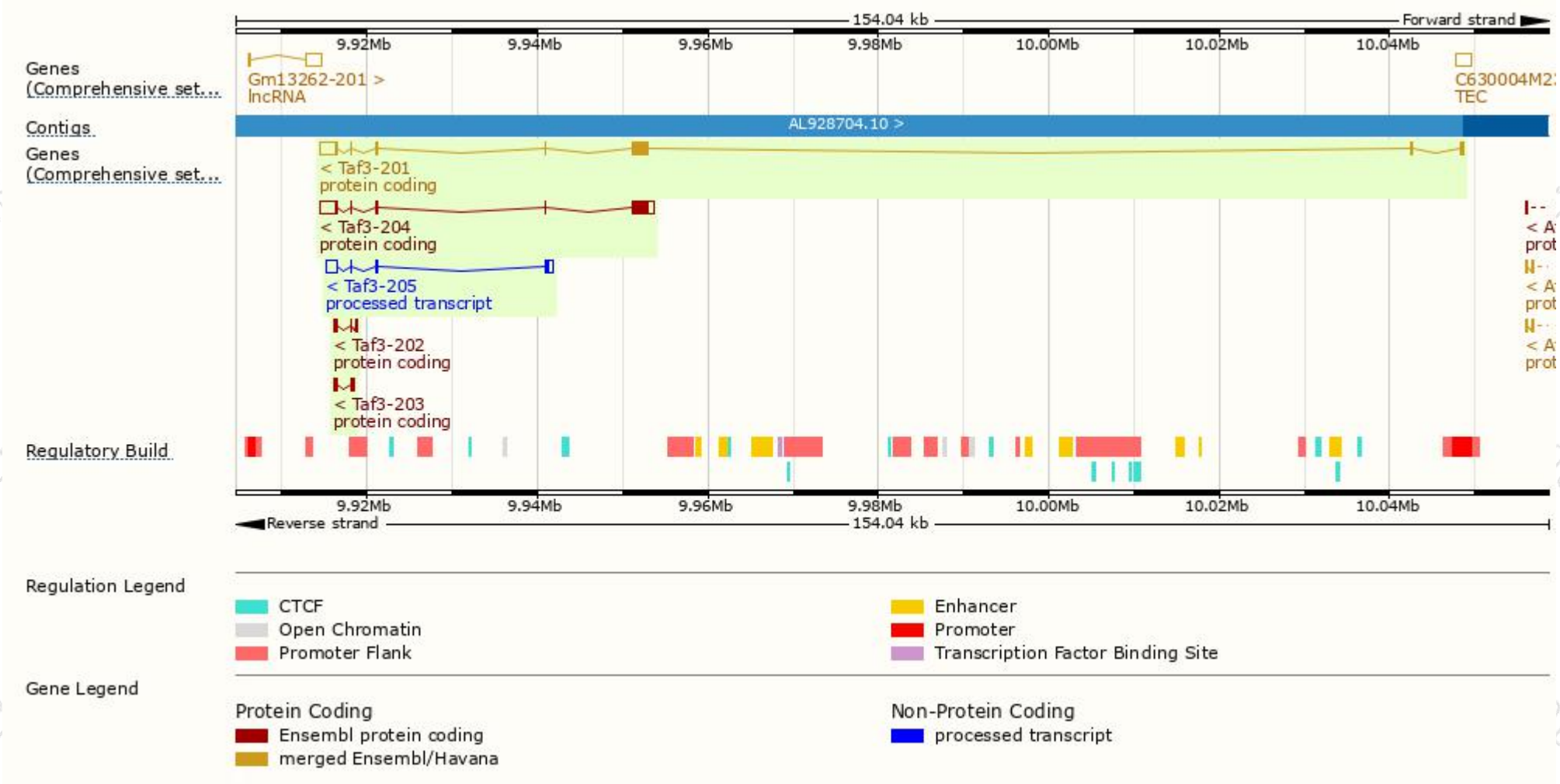
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Taf3-201	ENSMUST00000026888.10	4792	932aa	Protein coding	CCDS15675	A2ASY1 Q5HZG4	TSL:1 GENCODE basic APPRIS P1
Taf3-204	ENSMUST00000114909.1	4897	779aa	Protein coding	-	A2ASY0	TSL:1 GENCODE basic
Taf3-203	ENSMUST00000114907.1	695	108aa	Protein coding	-	A2ASX9	TSL:1 GENCODE basic
Taf3-202	ENSMUST00000114906.1	583	51aa	Protein coding	-	A2ASX8	TSL:2 GENCODE basic
Taf3-205	ENSMUST00000129720.1	2217	No protein	Processed transcript	-	-	TSL:5

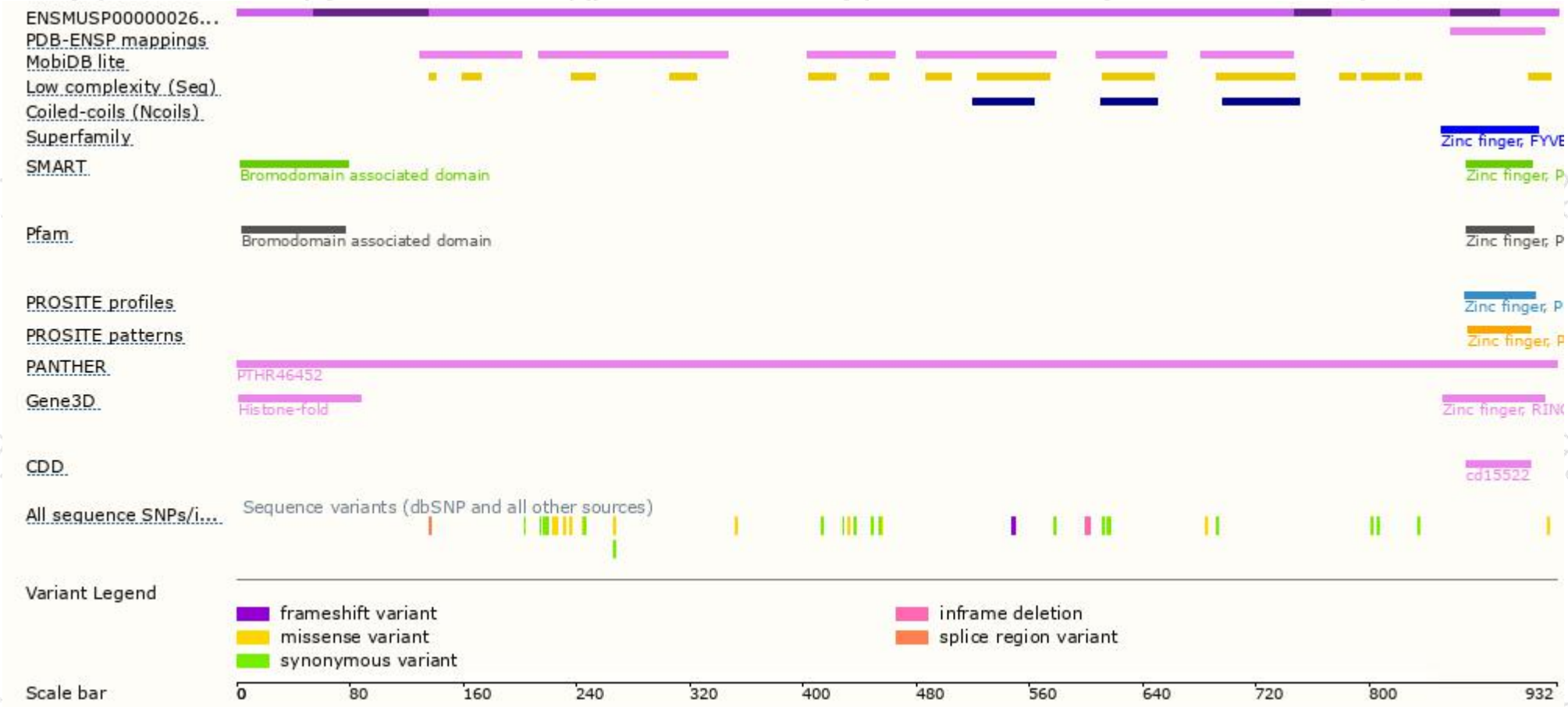
The strategy is based on the design of *Taf3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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