

Zfp777 Cas9-CKO Strategy

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Project Overview

Project Name

Zfp777

Project type

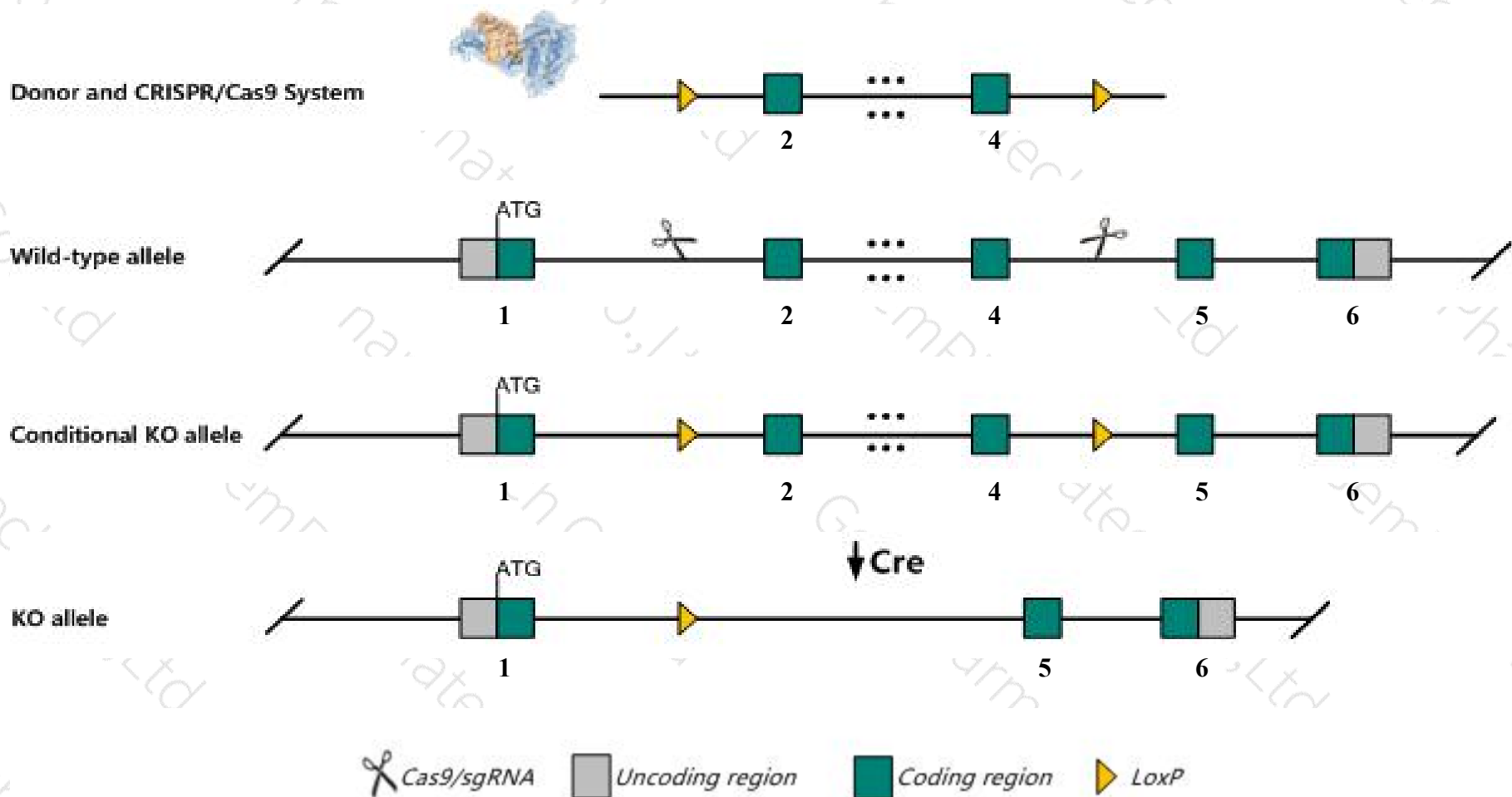
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp777* gene. The schematic diagram is as follows:



- The *Zfp777* gene has 5 transcripts. According to the structure of *Zfp777* gene, exon2-exon4 of *Zfp777*-202(ENSMUST00000114583.7) transcript is recommended as the knockout region. The region contains 1099bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp777* 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 and cell types.

- The KO region is close to *Gm24563* gene. Knockout the region may affect the function of *Gm24563* gene.
- The *Zfp777* gene is located on the Chr6. 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)

Zfp777 zinc finger protein 777 [*Mus musculus* (house mouse)]

Gene ID: 72306, updated on 10-Oct-2020

Summary

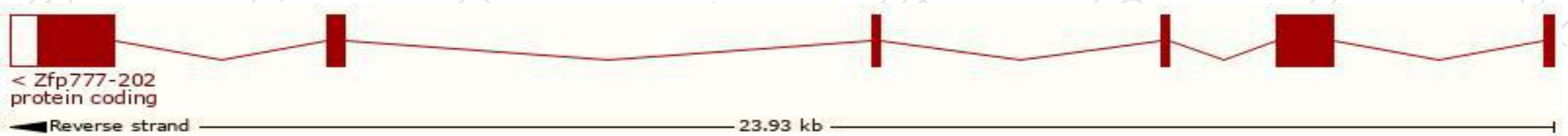
Official Symbol	Zfp777 provided by MGI
Official Full Name	zinc finger protein 777 provided by MGI
Primary source	MGI:MGI:1919556
See related	Ensembl:ENSMUSG00000071477
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2500002G23Rik
Expression	Ubiquitous expression in thymus adult (RPKM 6.7), ovary adult (RPKM 6.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

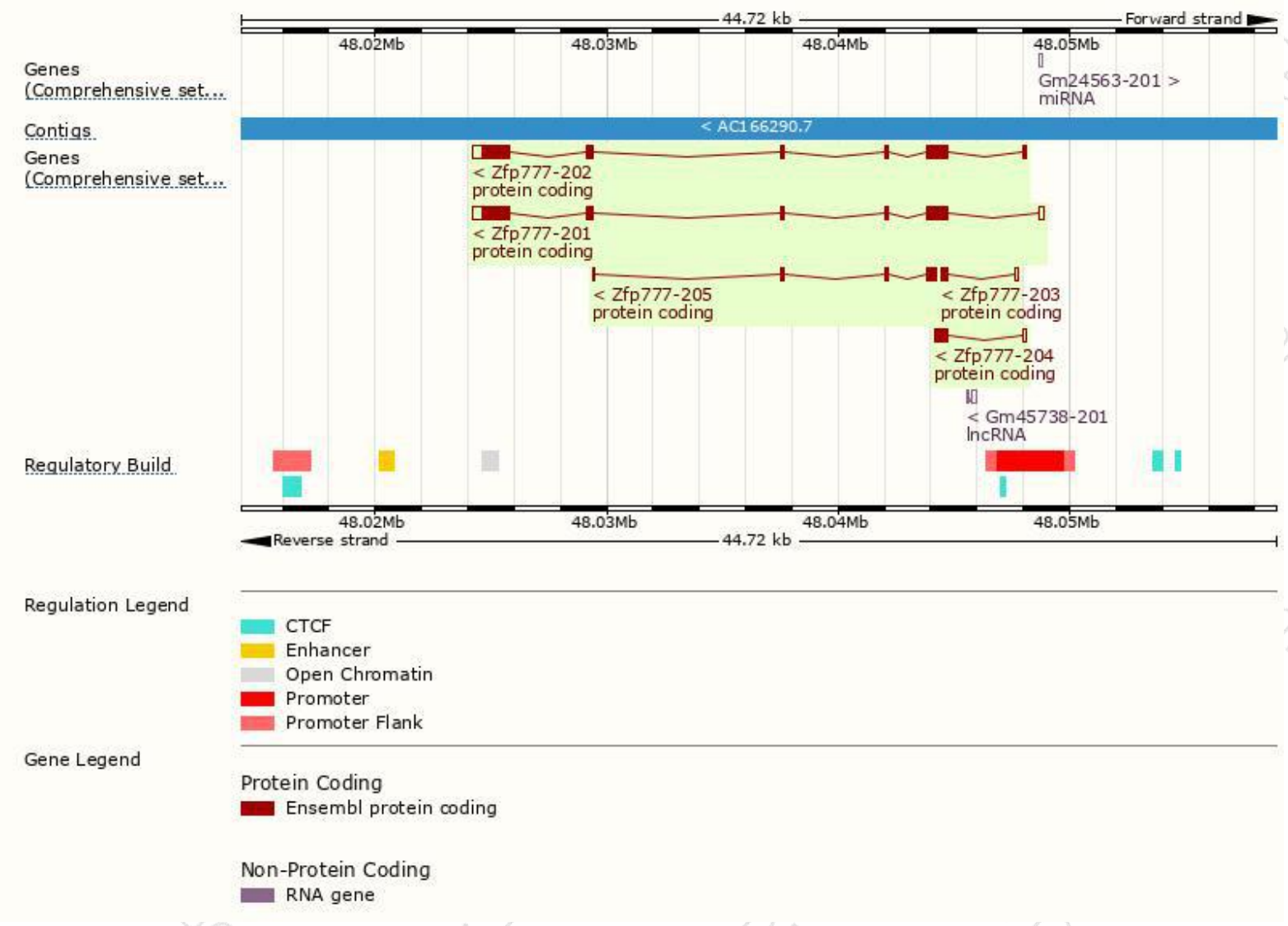
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp777-201	ENSMUST00000095944.9	3184	841aa	Protein coding	CCDS85035	G5E8L5	TSL:1 GENCODE basic APPRIS ALT2
Zfp777-202	ENSMUST00000114583.7	3111	885aa	Protein coding	CCDS39477	B9EKF4	TSL:5 GENCODE basic APPRIS P3
Zfp777-205	ENSMUST00000148362.1	736	227aa	Protein coding	-	F6QAV8	CDS 5' incomplete TSL:3
Zfp777-204	ENSMUST00000147281.1	668	174aa	Protein coding	-	D3Z5F8	CDS 3' incomplete TSL:2
Zfp777-203	ENSMUST00000125385.1	420	80aa	Protein coding	-	D3YYD3	CDS 3' incomplete TSL:2

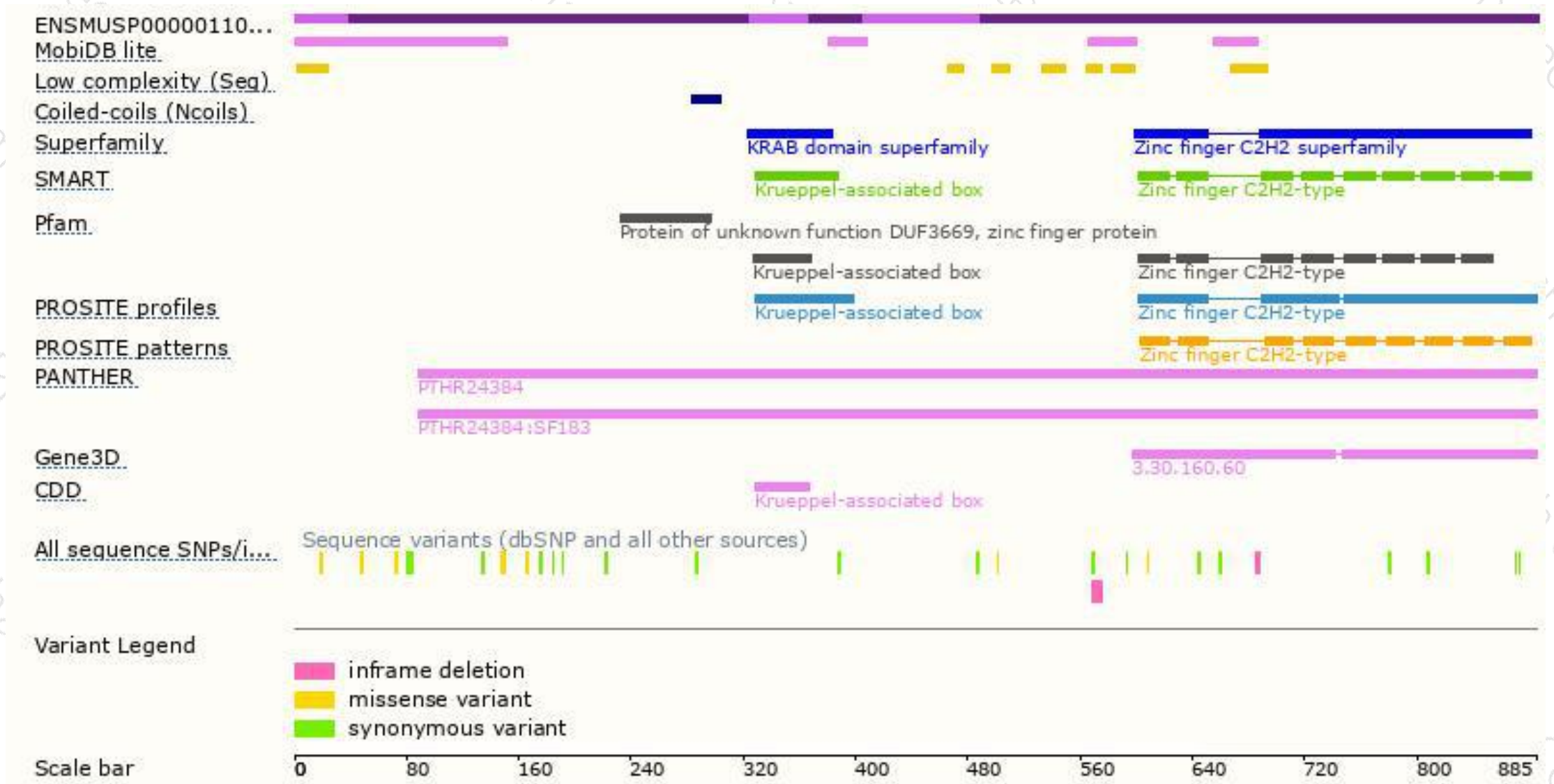
The strategy is based on the design of *Zfp777-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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