Zfp62 Cas9-CKO Strategy

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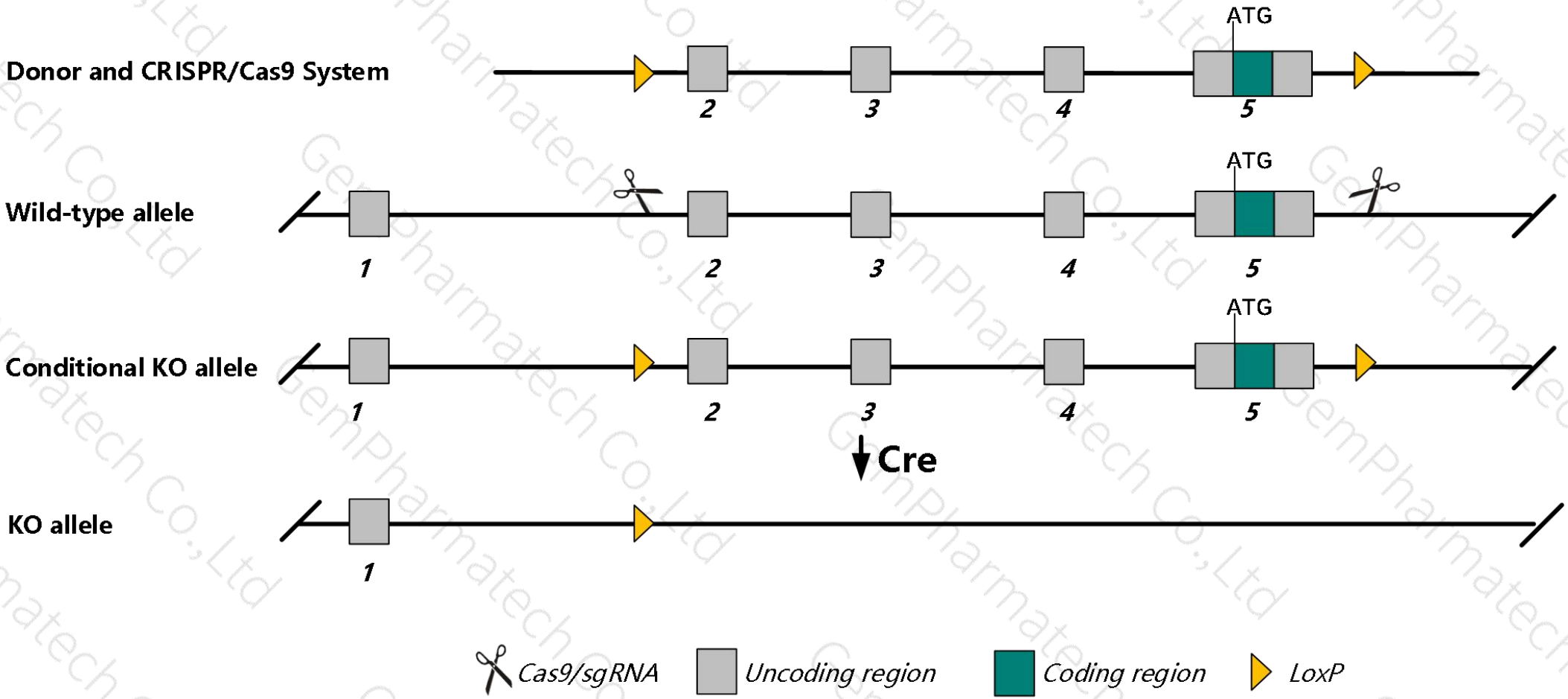
Project Overview

Project Name	***Zfp62***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp62* gene. The schematic diagram is as follows:



Technical routes

- The *Zfp62* gene has 12 transcripts. According to the structure of *Zfp62* gene, exon2-exon5 of *Zfp62-202* (ENSMUST00000109197.7) transcript is recommended as the knockout region.The region contains all of the coding sequence.Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Zfp62* 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 *Zfp62* gene is located on the Chr11. 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）

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Zfp62 zinc finger protein 62 [*Mus musculus* (house mouse)]

Gene ID: 22720, updated on 24-Oct-2019

Summary

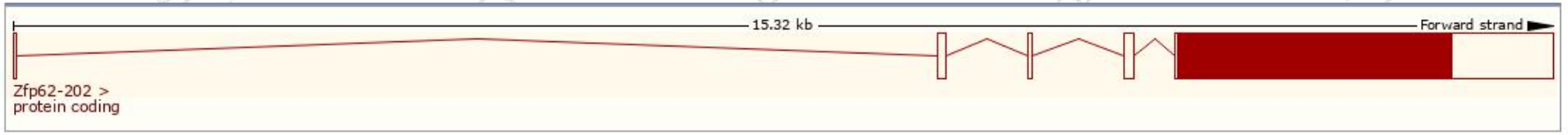
Official Symbol	Zfp62 provided by MGI
Official Full Name	zinc finger protein 62 provided by MGI
Primary source	MGI:MGI:99662
See related	Ensembl:ENSMUSG00000046311
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Broad expression in CNS E11.5 (RPKM 6.2), CNS E14 (RPKM 4.9) and 21 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

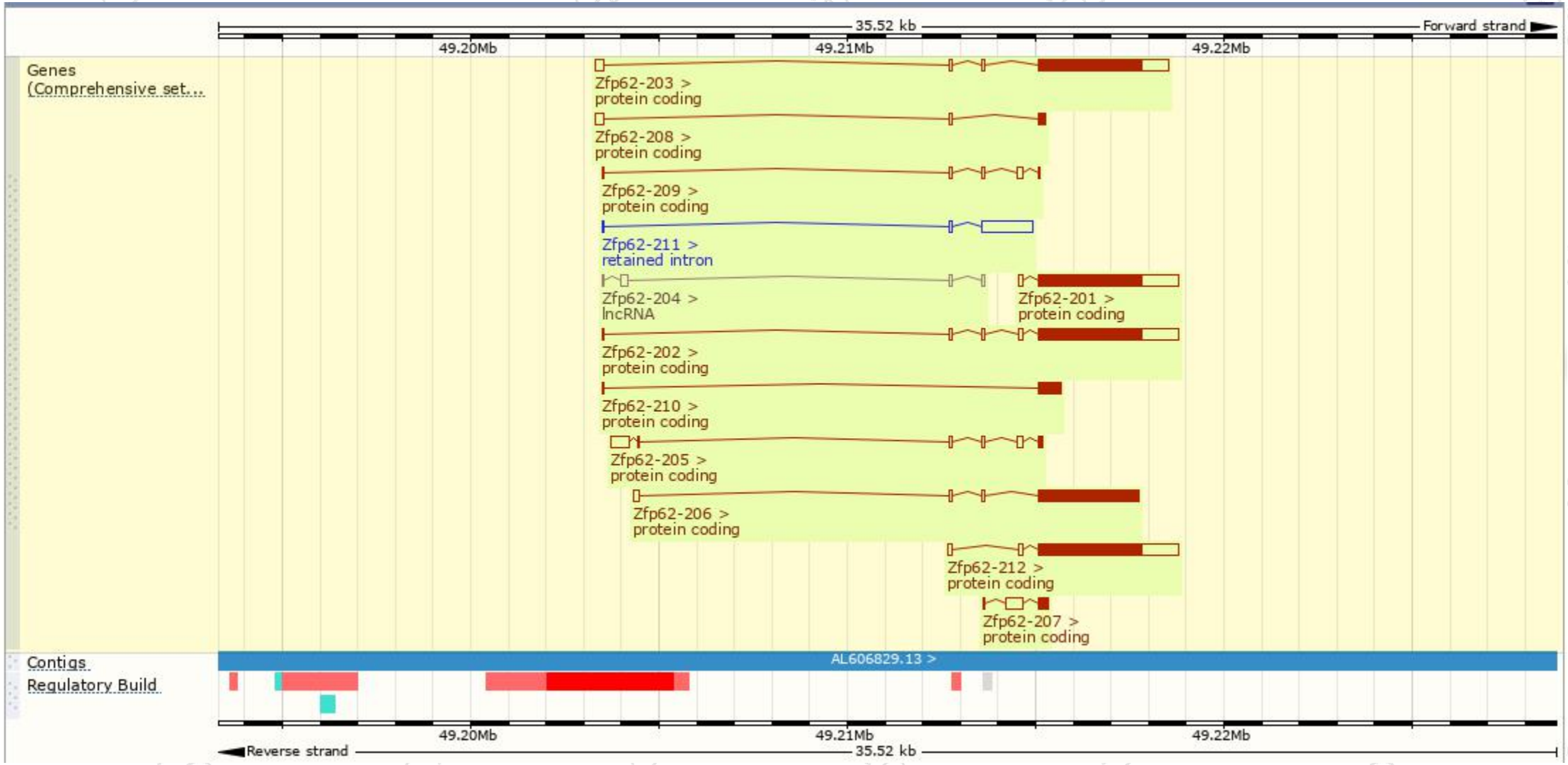
The gene has 12 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp62-202	ENSMUST00000109197.7	4029	907aa	Protein coding	CCDS24601	Q8C827	TSL:1 GENCODE basic APPRIS P1
Zfp62-212	ENSMUST00000180016.1	3964	907aa	Protein coding	CCDS24601	Q8C827	TSL:5 GENCODE basic APPRIS P1
Zfp62-203	ENSMUST00000109198.7	3872	907aa	Protein coding	CCDS24601	Q8C827	TSL:1 GENCODE basic APPRIS P1
Zfp62-201	ENSMUST00000061757.3	3852	907aa	Protein coding	CCDS24601	Q8C827	TSL:1 GENCODE basic APPRIS P1
Zfp62-206	ENSMUST00000136539.1	2992	893aa	Protein coding	-	J3JS23	CDS 3' incomplete TSL:1
Zfp62-205	ENSMUST00000133150.7	880	31aa	Protein coding	-	Q3UGK1	CDS 3' incomplete TSL:1
Zfp62-207	ENSMUST00000136691.1	743	80aa	Protein coding	-	I7HPA9	CDS 3' incomplete TSL:3
Zfp62-210	ENSMUST00000151228.1	640	195aa	Protein coding	-	J3JS22	CDS 3' incomplete TSL:3
Zfp62-208	ENSMUST00000137061.8	542	65aa	Protein coding	-	J3JS21	CDS 3' incomplete TSL:3
Zfp62-209	ENSMUST00000150284.7	366	9aa	Protein coding	-	A0A0G2JDA7	CDS 3' incomplete TSL:3
Zfp62-211	ENSMUST00000157023.7	1457	No protein	Retained intron	-	-	TSL:1
Zfp62-204	ENSMUST00000128932.7	356	No protein	lncRNA	-	-	TSL:3

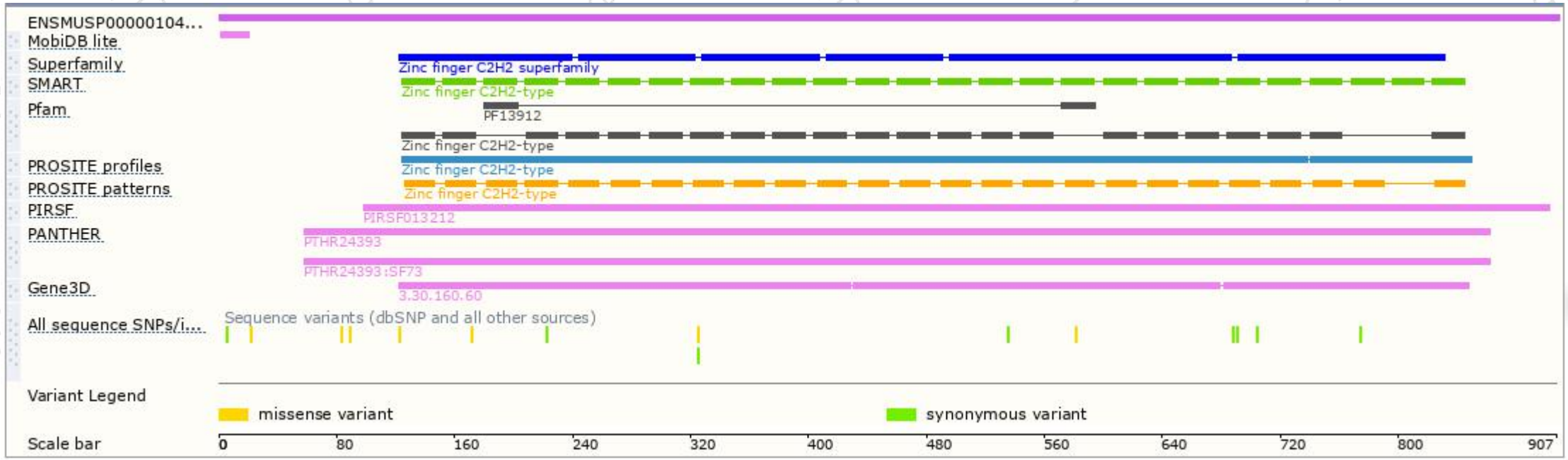
The strategy is based on the design of *Zfp62-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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