Zswim5 Cas9-CKO Strategy

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Project Overview

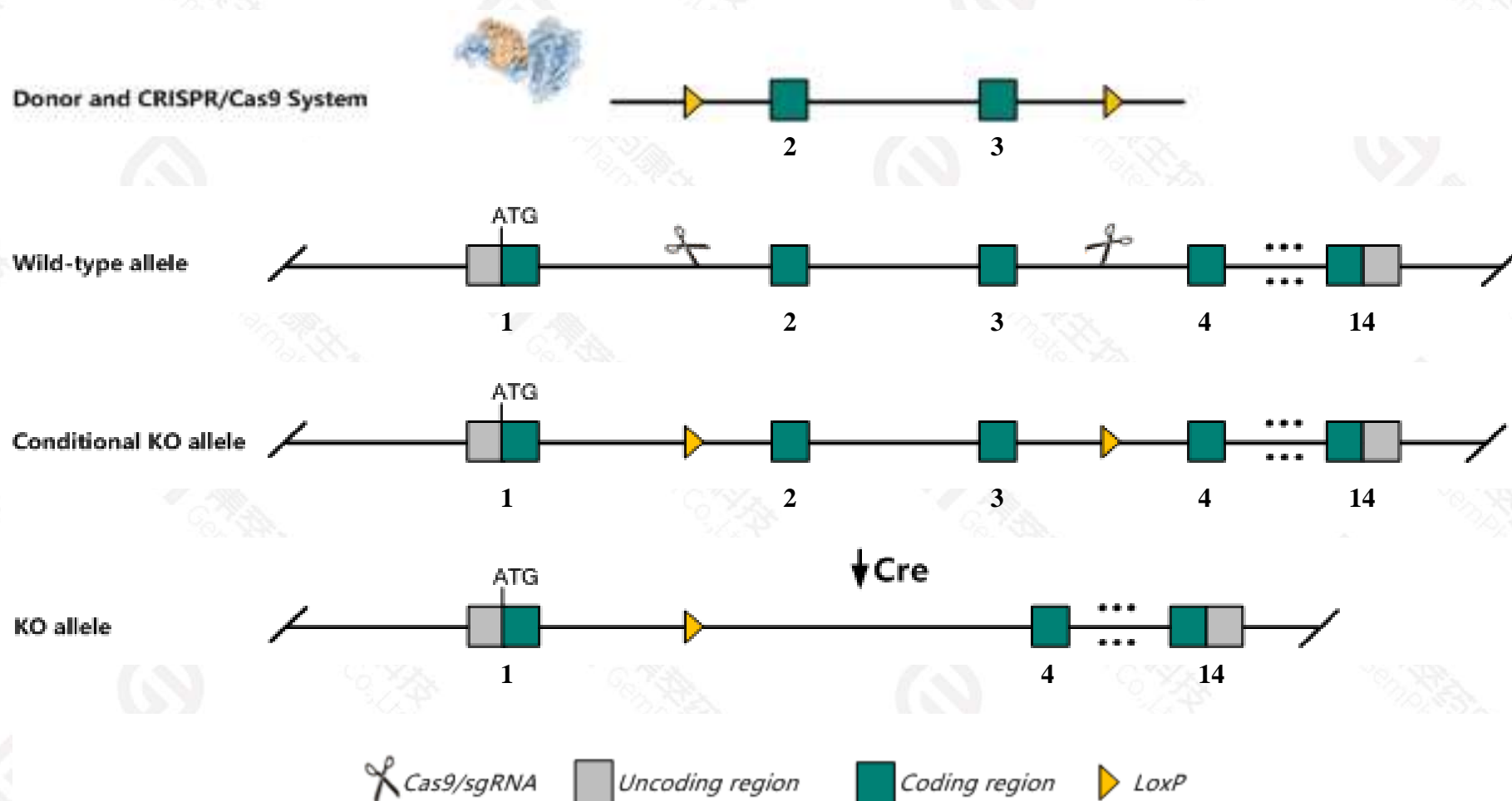|	
Project Name	*Zswim5*
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zswim5* gene. The schematic diagram is as follows:

➤ The *Zswim5* gene has 1 transcript. According to the structure of *Zswim5* gene, exon2-exon3 of *Zswim5-201*(ENSMUST00000044823.4) transcript is recommended as the knockout region.The region contains 506bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Zswim5* gene. The brief process is as follows:sgRNA was transcribed in vitro, donor 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.

Notice

➤ The KO region contains functional region of the *Gm12998* gene.Knockout the region may affect the function of *Gm12998* gene.

➤ The *Zswim5* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information （NCBI）

Zswim5 zinc finger SWIM-type containing 5 [Mus musculus (house mouse)]

Gene ID: 74464, updated on 25-Sep-2020

▲ Summary

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Official Symbol	Zswim5 provided by MGI
Official Full Name	zinc finger SWIM-type containing 5 provided by MGI
Primary source	MGI:MGI:1921714
See related	Ensembl:ENSMUSG00000033948
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
Also known as	4933426E21Rik, AI503093, mKIAA1511
Expression	Broad expression in whole brain E14.5 (RPKM 10.6), CNS E14 (RPKM 8.6) and 16 other tissuesSee 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
Zswim5-201	ENSMUST00000044823.4	5582	1188aa	Protein coding	CCDS18520		TSL:1 , GENCODE basic , APPRIS P1 ,

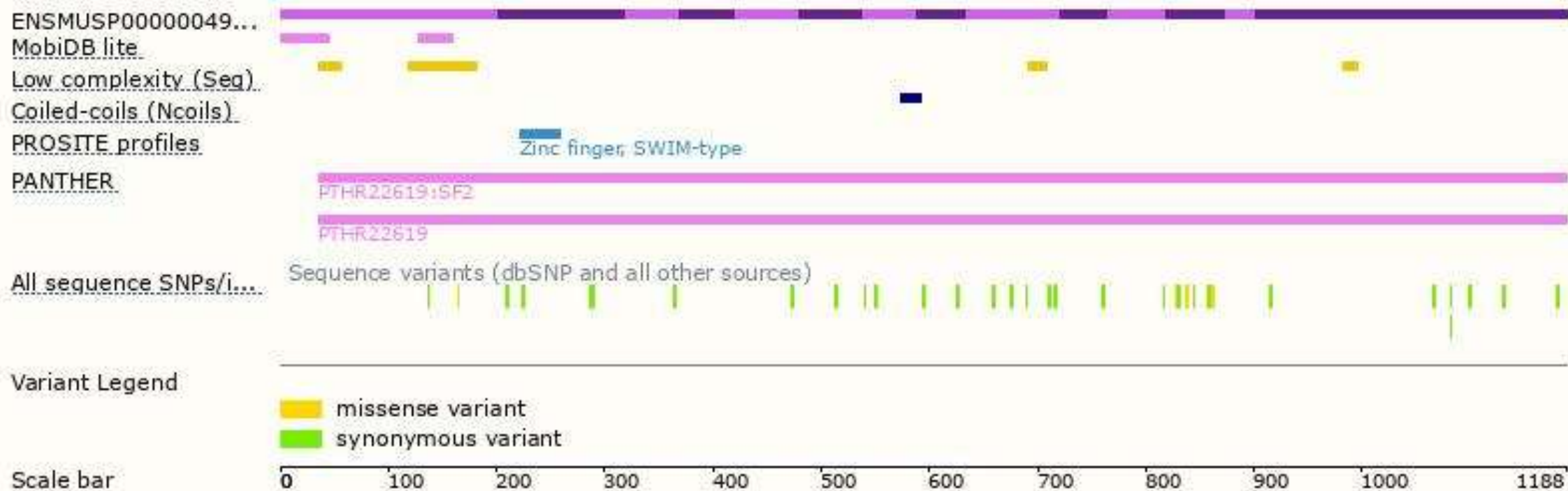The strategy is based on the design of *Zswim5-201* transcript,the transcription is shown below:
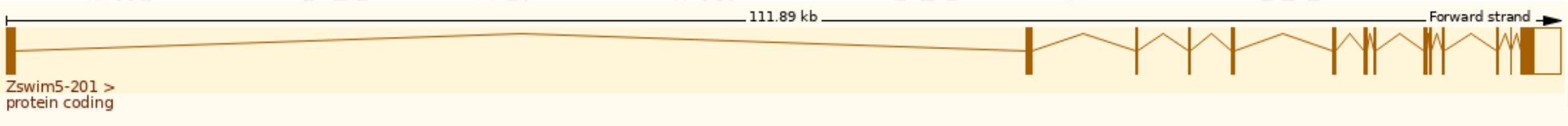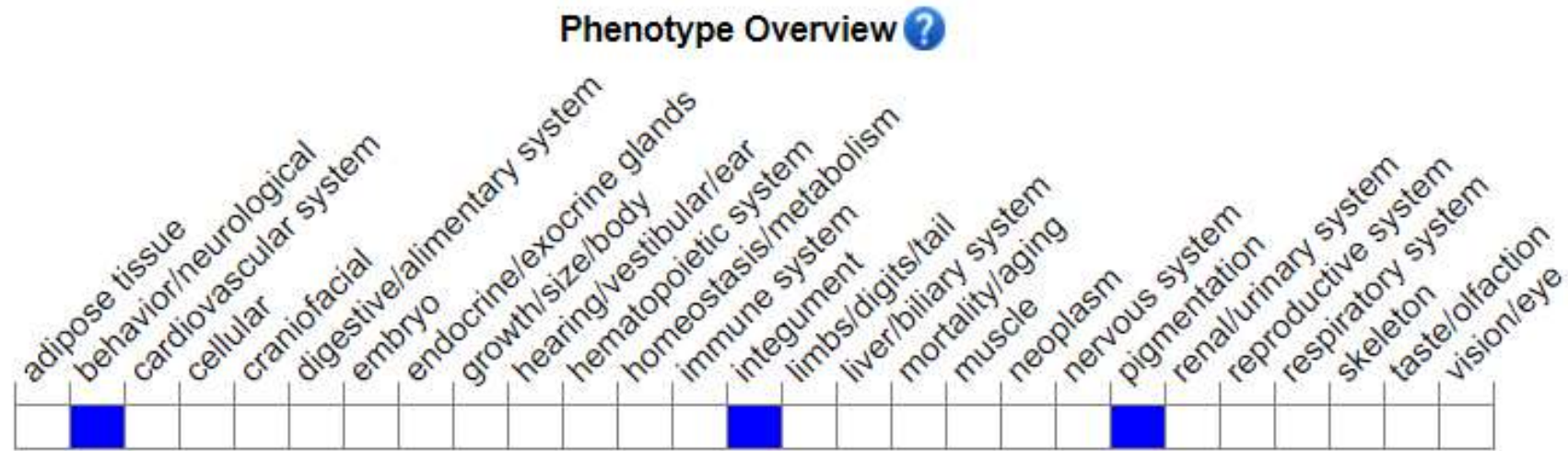
Genomic location distribution
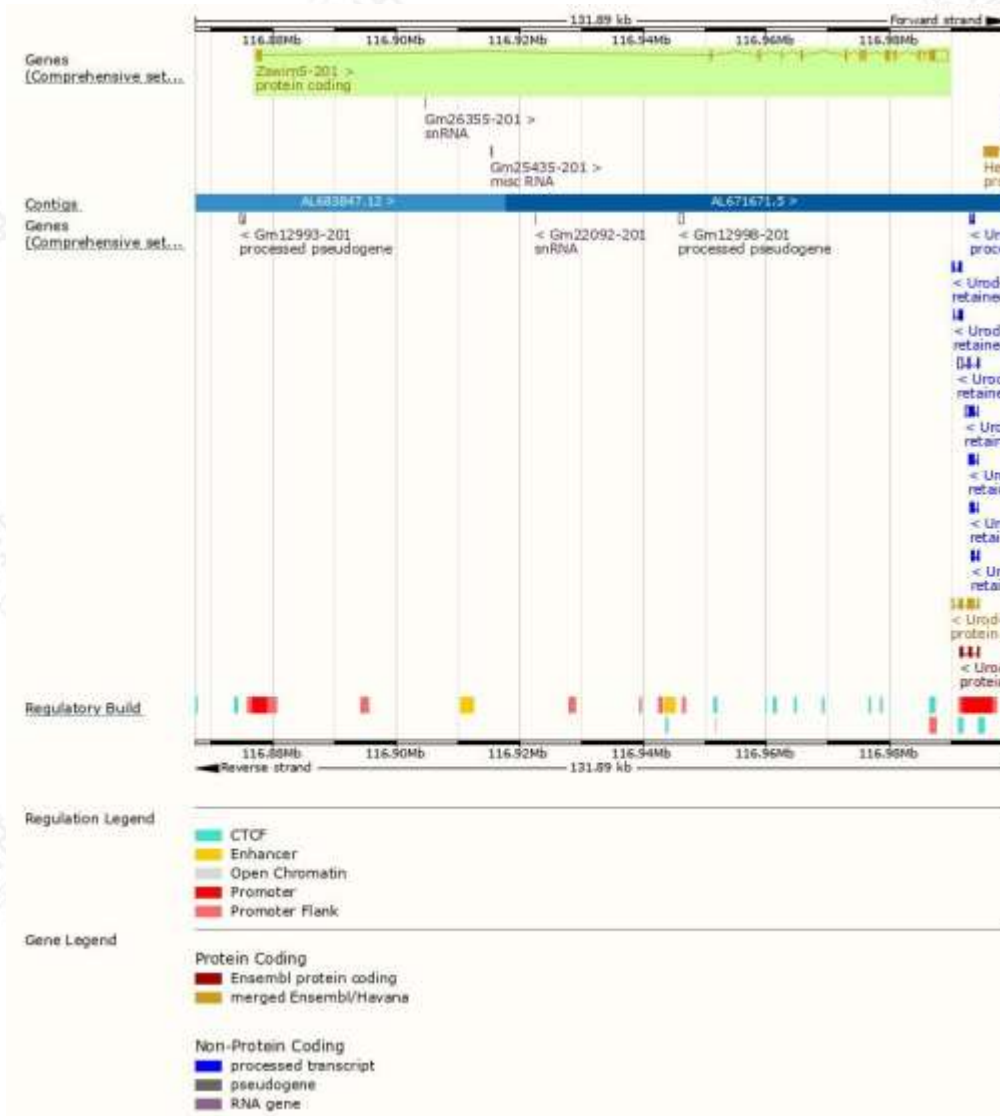
Protein domain

Mouse phenotype description(MGI)

Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(http://www.informatics.jax.org/).

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