

***Zscan29* Cas9-KO Strategy**

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Project Overview

Project Name

Zscan29

Project type

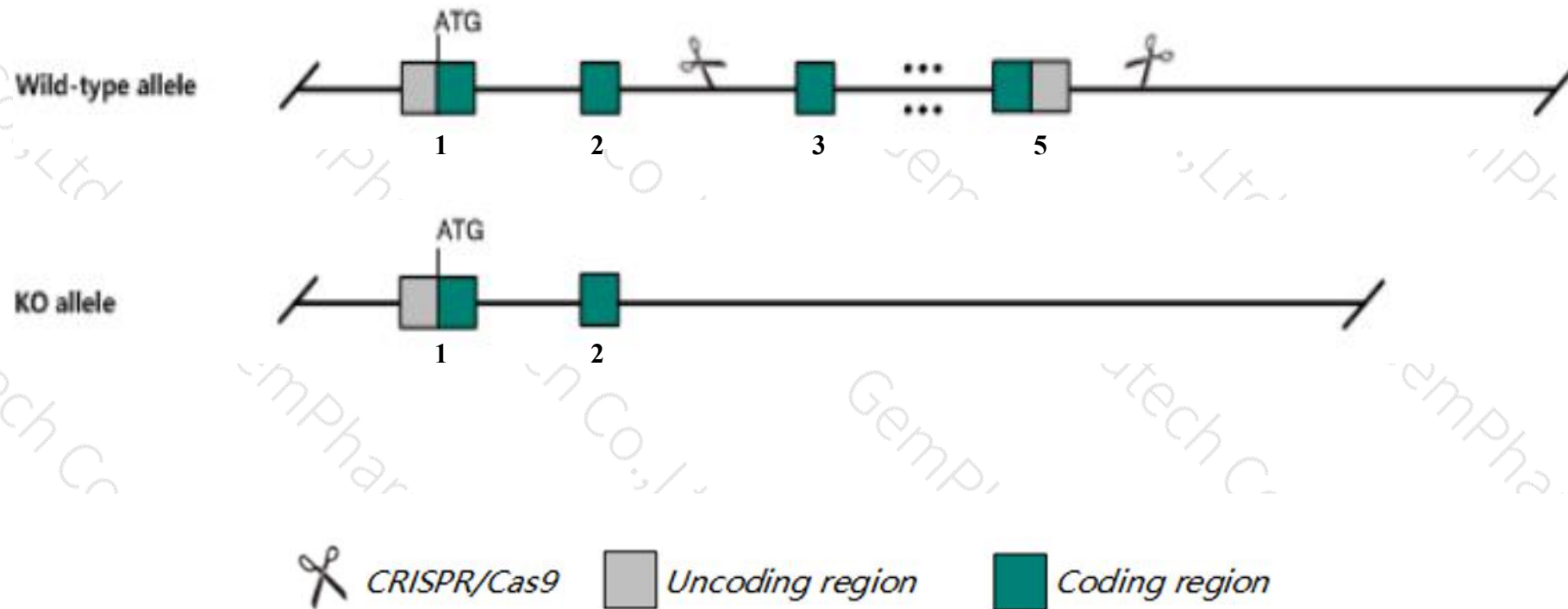
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zscan29* gene. The schematic diagram is as follows:



- The *Zscan29* gene has 5 transcripts. According to the structure of *Zscan29* gene, exon3-exon5 of *Zscan29*-202(ENSMUST00000110661.8) transcript is recommended as the knockout region. The region contains most 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 *Zscan29* gene. The brief process is as follows: CRISPR/Cas9 system 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 N-terminal of *Zscan29* gene will remain several amino acids, it may remain the partial function of *Zscan29* gene.
- The KO region is close to *Tubgcp4* gene. Knockout the region may affect the function of *Tubgcp4* gene.
- The *Zscan29* 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.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Zscan29 zinc finger SCAN domains 29 [*Mus musculus* (house mouse)]

Gene ID: 99334, updated on 25-Sep-2020

Summary

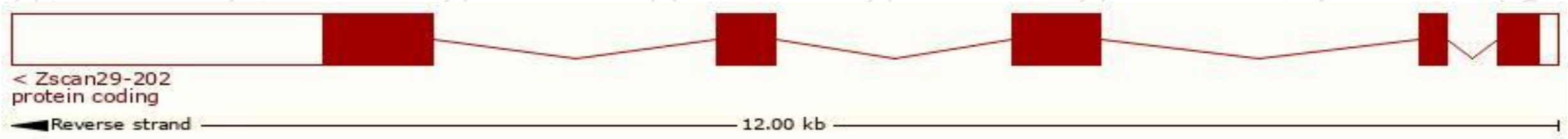
Official Symbol	Zscan29 provided by MGI
Official Full Name	zinc finger SCAN domains 29 provided by MGI
Primary source	MGI:MGI:2139317
See related	Ensembl:ENSMUSG00000050619
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Zfp69; Zfp690; AW125441
Expression	Ubiquitous expression in CNS E11.5 (RPKM 2.7), bladder adult (RPKM 2.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

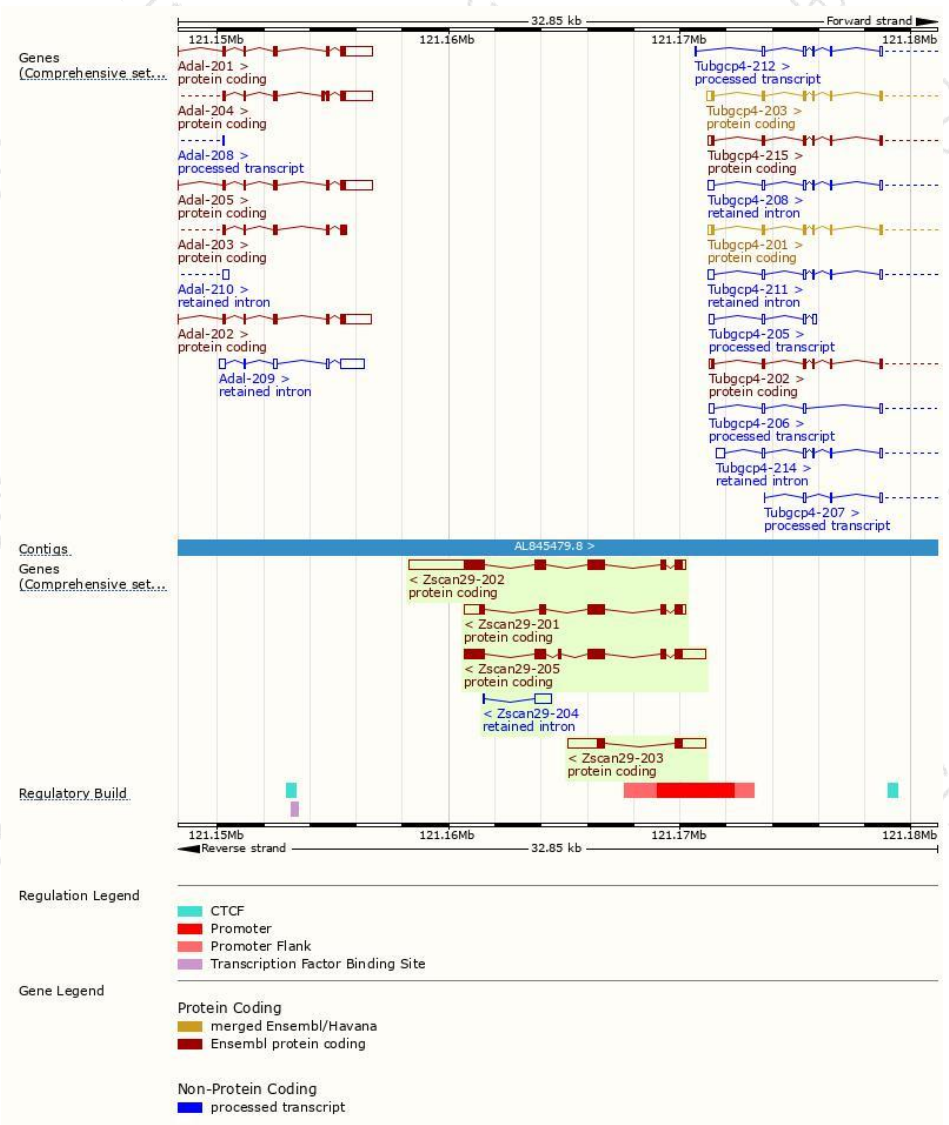
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zscan29-202	ENSMUST00000110661.8	5072	834aa	Protein coding	CCDS71123	A2ARU5	TSL:5 GENCODE basic APPRIS P2
Zscan29-205	ENSMUST00000163766.7	3611	869aa	Protein coding	-	E9Q5B4	TSL:5 GENCODE basic APPRIS ALT2
Zscan29-203	ENSMUST00000146243.1	2894	206aa	Protein coding	-	B7ZCX1	TSL:1 GENCODE basic
Zscan29-201	ENSMUST00000079024.11	2465	548aa	Protein coding	-	A2ARU6	TSL:5 GENCODE basic
Zscan29-204	ENSMUST00000156370.1	756	No protein	Retained intron	-	-	TSL:3

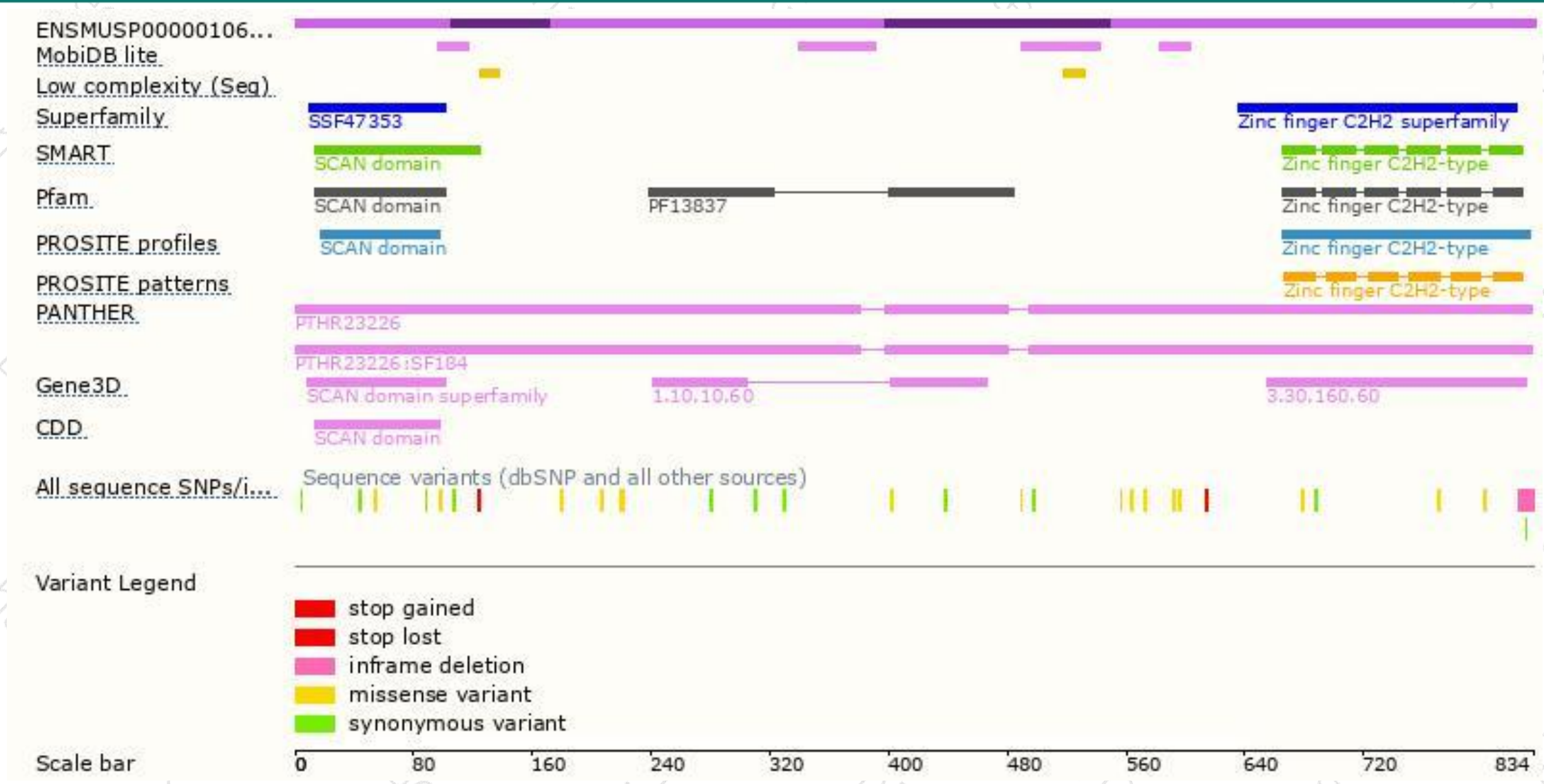
The strategy is based on the design of *Zscan29-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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