

***Zscan18* Cas9-KO Strategy**

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Project Overview

Project Name

Zscan18

Project type

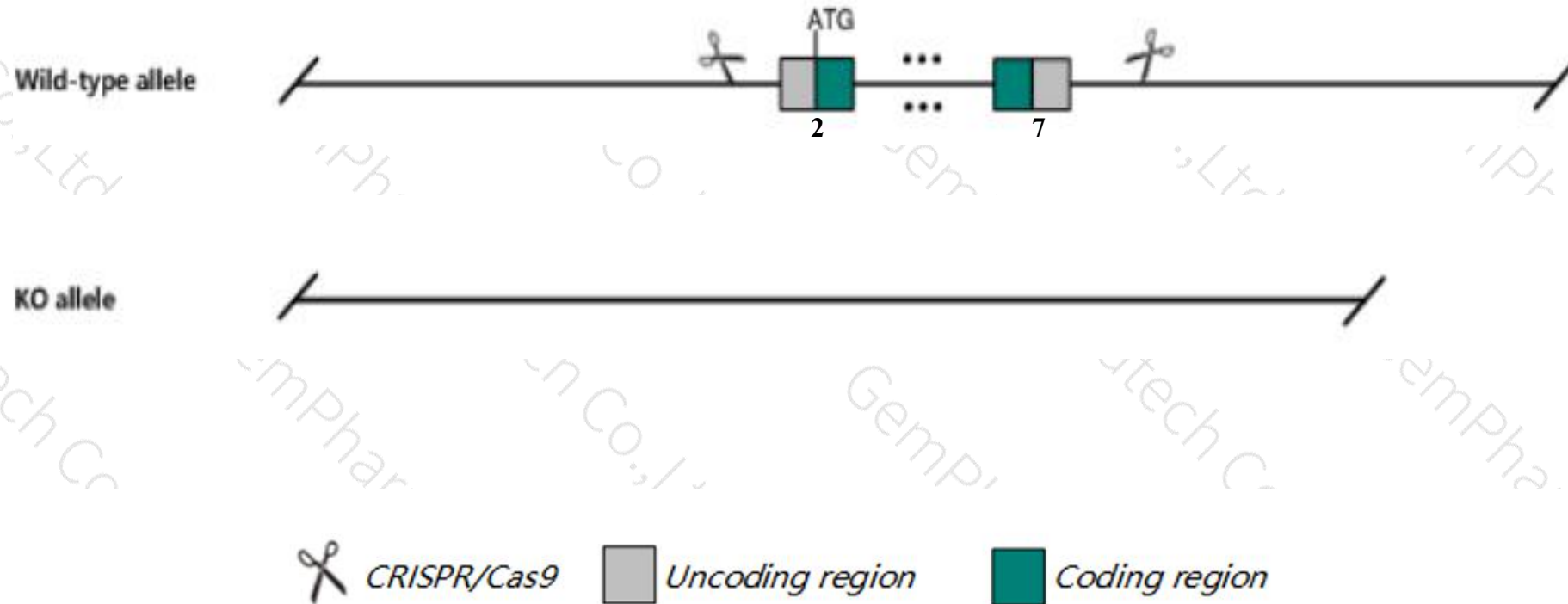
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zscan18* gene. The schematic diagram is as follows:



- The *Zscan18* gene has 6 transcripts. According to the structure of *Zscan18* gene, exon2-exon7 of *Zscan18*-205(ENSMUST00000211392.1) 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 *Zscan18* 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 KO region contains functional region of the *1700047O18Rik* gene. Knockout the region may affect the function of *1700047O18Rik* gene.
- The *Zscan18* gene is located on the Chr7. 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)

Zscan18 zinc finger and SCAN domain containing 18 [Mus musculus (house mouse)]

Gene ID: 232875, updated on 13-Mar-2020

Summary



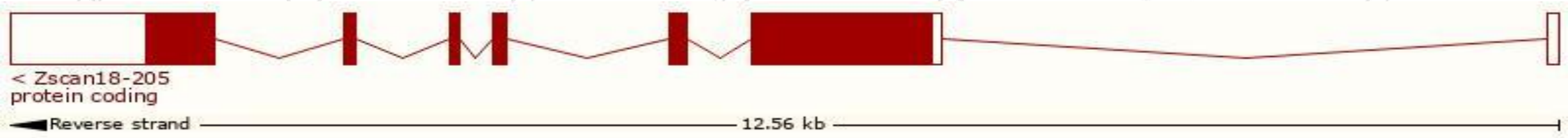
Official Symbol	Zscan18 provided by MGI
Official Full Name	zinc finger and SCAN domain containing 18 provided by MGI
Primary source	MGI:MGI:3643810
See related	Ensembl:ENSMUSG00000070822
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	EG232875
Expression	Broad expression in CNS E18 (RPKM 4.5), CNS E14 (RPKM 2.9) and 19 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

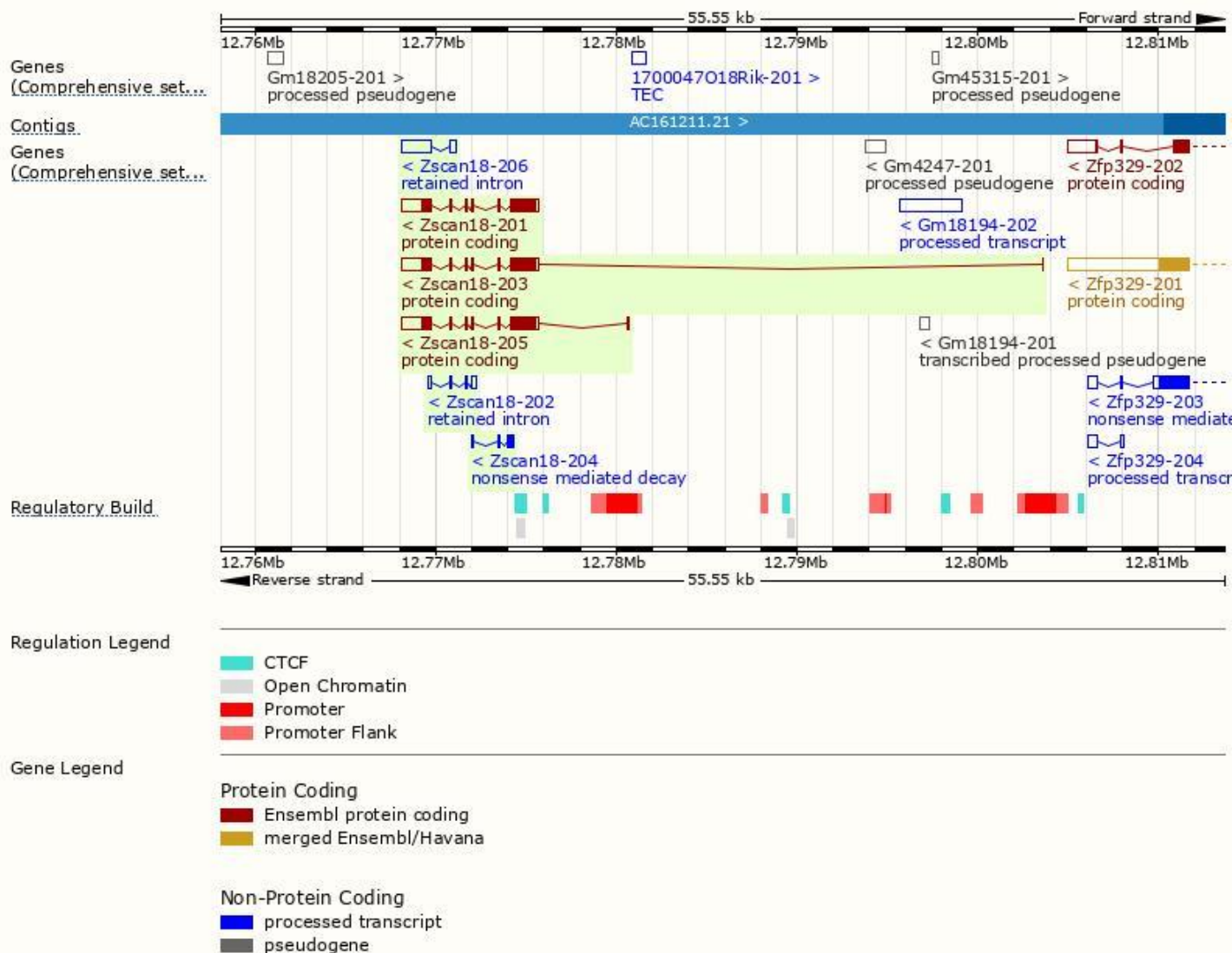
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zscan18-205	ENSMUST00000211392.1	3709	809aa	Protein coding	CCDS52021	E9PUD6	TSL:5 GENCODE basic APPRIS P1
Zscan18-203	ENSMUST00000210650.1	3668	809aa	Protein coding	CCDS52021	E9PUD6	TSL:5 GENCODE basic APPRIS P1
Zscan18-201	ENSMUST00000046245.5	3626	809aa	Protein coding	CCDS52021	E9PUD6	TSL:5 GENCODE basic APPRIS P1
Zscan18-204	ENSMUST00000210891.1	629	87aa	Nonsense mediated decay	-	A0A1B0GRW2	CDS 5' incomplete TSL:3
Zscan18-206	ENSMUST00000211665.1	1969	No protein	Retained intron	-	-	TSL:1
Zscan18-202	ENSMUST00000209869.1	552	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Zscan18-205* 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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