

***Zscan25* Cas9-CKO Strategy**

Designer: Daohua Xu

Reviewer: Huimin Su

Design Date: 2020-9-9

Project Overview

Project Name

Zscan25

Project type

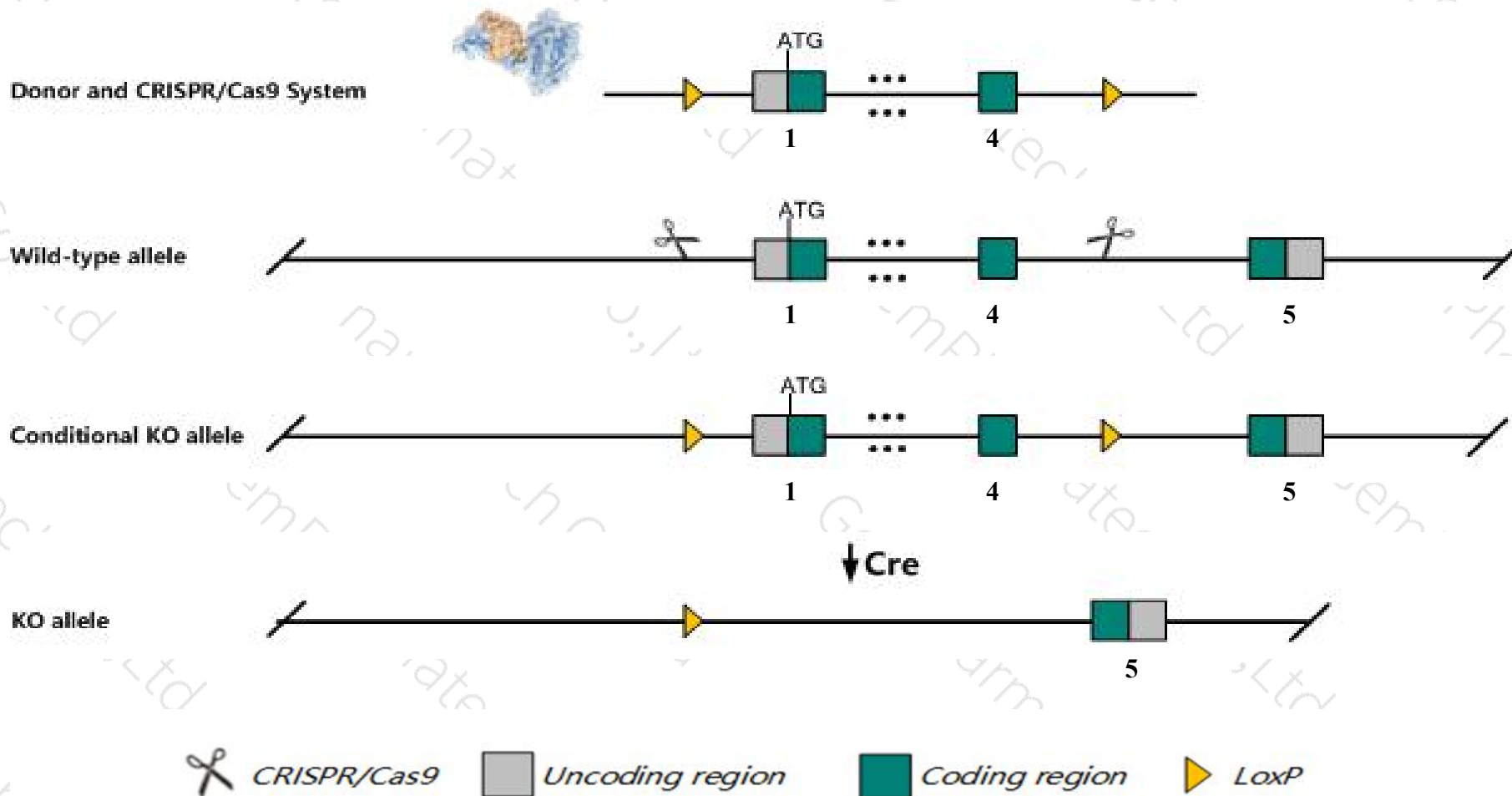
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zscan25* gene. The schematic diagram is as follows:



Technical routes

- The *Zscan25* gene has 3 transcripts. According to the structure of *Zscan25* gene, exon1-exon4 of *Zscan25-201*(ENSMUST00000094116.4) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zscan25* 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.

- The *Zscan25* gene is located on the Chr5. 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)

Zscan25 zinc finger and SCAN domain containing 25 [Mus musculus (house mouse)]

Gene ID: 666311, updated on 13-Mar-2020

Summary



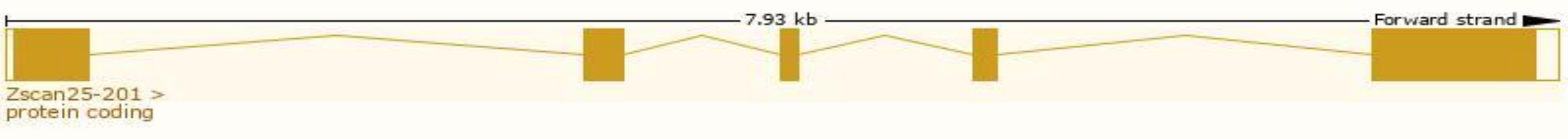
Official Symbol	Zscan25 provided by MGI
Official Full Name	zinc finger and SCAN domain containing 25 provided by MGI
Primary source	MGI:MGI:3647079
See related	Ensembl:ENSMUSG00000070420
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	EG666311, Zfp498
Expression	Ubiquitous expression in ovary adult (RPKM 9.9), thymus adult (RPKM 8.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

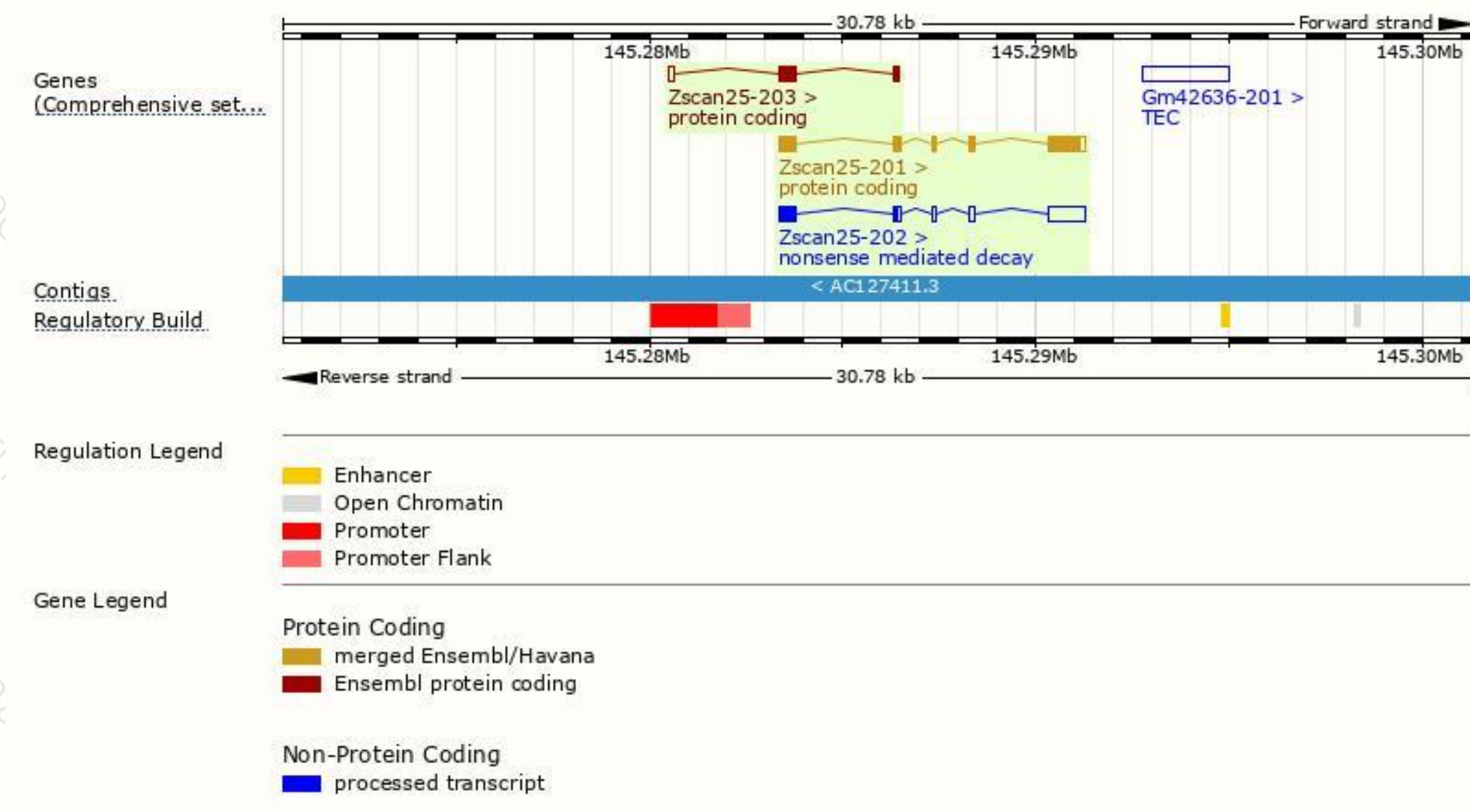
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zscan25-201	ENSMUST00000094116.4	1796	543aa	Protein coding	CCDS39387	B2RX31	TSL:1 GENCODE basic APPRIS P1
Zscan25-203	ENSMUST00000200246.1	685	179aa	Protein coding	-	A0A0G2JDH2	CDS 3' incomplete TSL:3
Zscan25-202	ENSMUST00000199563.1	1799	161aa	Nonsense mediated decay	-	A0A0G2JG70	TSL:1

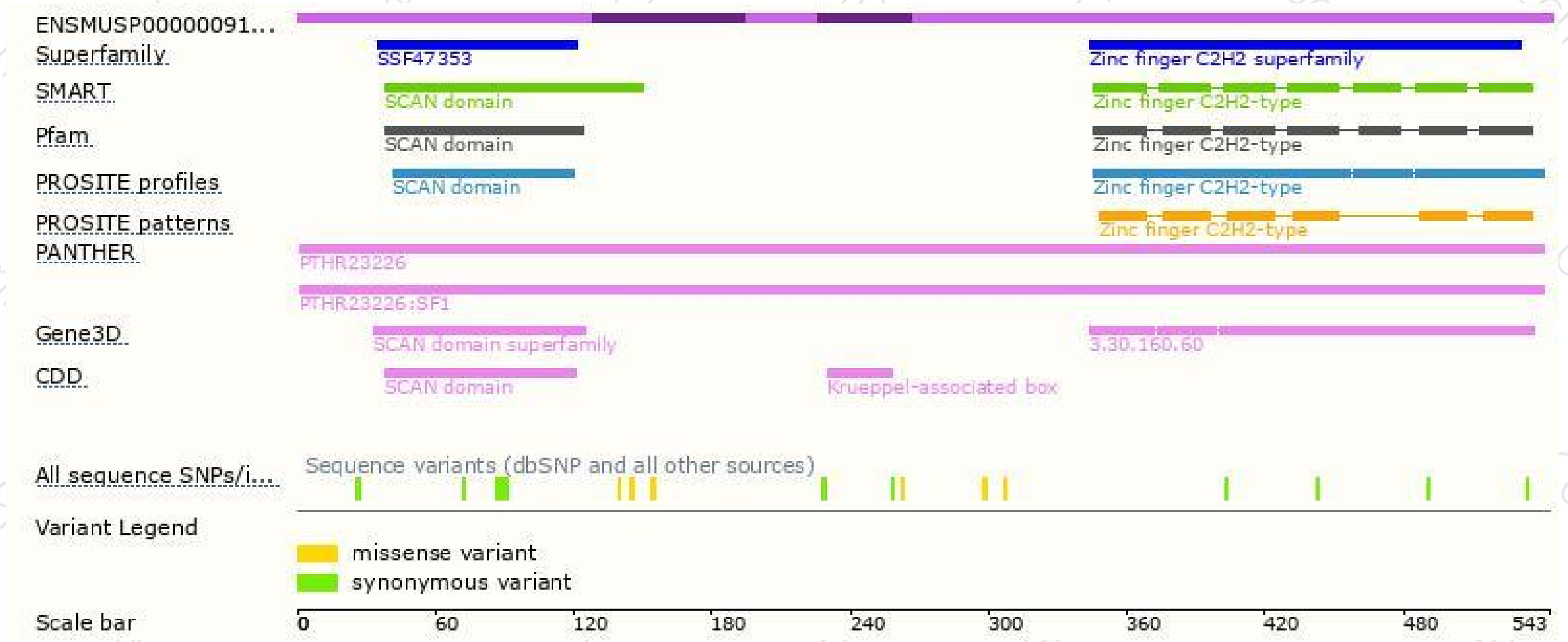
The strategy is based on the design of *Zscan25-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

