Zfp449 Cas9-KO Strategy

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Design Date: 2020-10-10

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Project Overview

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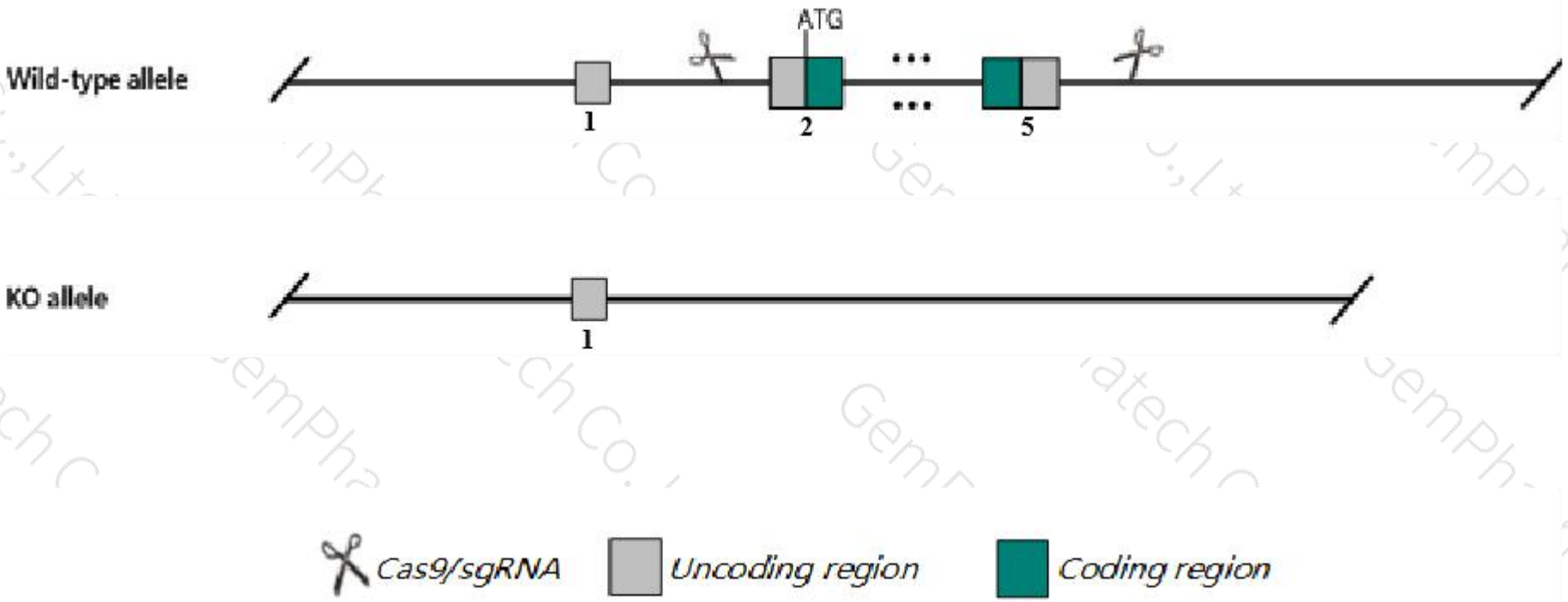
Project Name	***Zfp449***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp449* gene. The schematic diagram is as follows:



Technical routes

➢ The *Zfp449* gene has 1 transcript. According to the structure of *Zfp449* gene, exon2-exon5 of *Zfp449-201*(ENSMUST00000101560.3) 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 *Zfp449* 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.

Notice

➢ According to the existing MGI data,mice homozygous for a knock-out allele exhibit normal skeletal growth and cartilage homeostasis.

➢ The *Zfp449* gene is located on the ChrX. 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）

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Zfp449 zinc finger protein 449 [*Mus musculus* (house mouse)]

Gene ID: 78619, updated on 25-Sep-2020

Summary

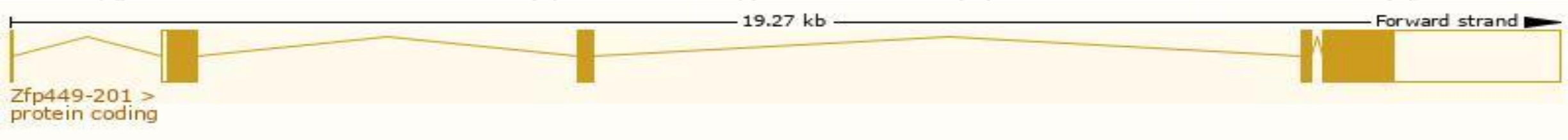
Official Symbol	Zfp449 provided by MGI
Official Full Name	zinc finger protein 449 provided by MGI
Primary source	MGI:MGI:1925869
See related	Ensembl:ENSMUSG00000073176
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9530049C15Rik
Expression	Broad expression in limb E14.5 (RPKM 2.2), bladder adult (RPKM 1.6) and 21 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

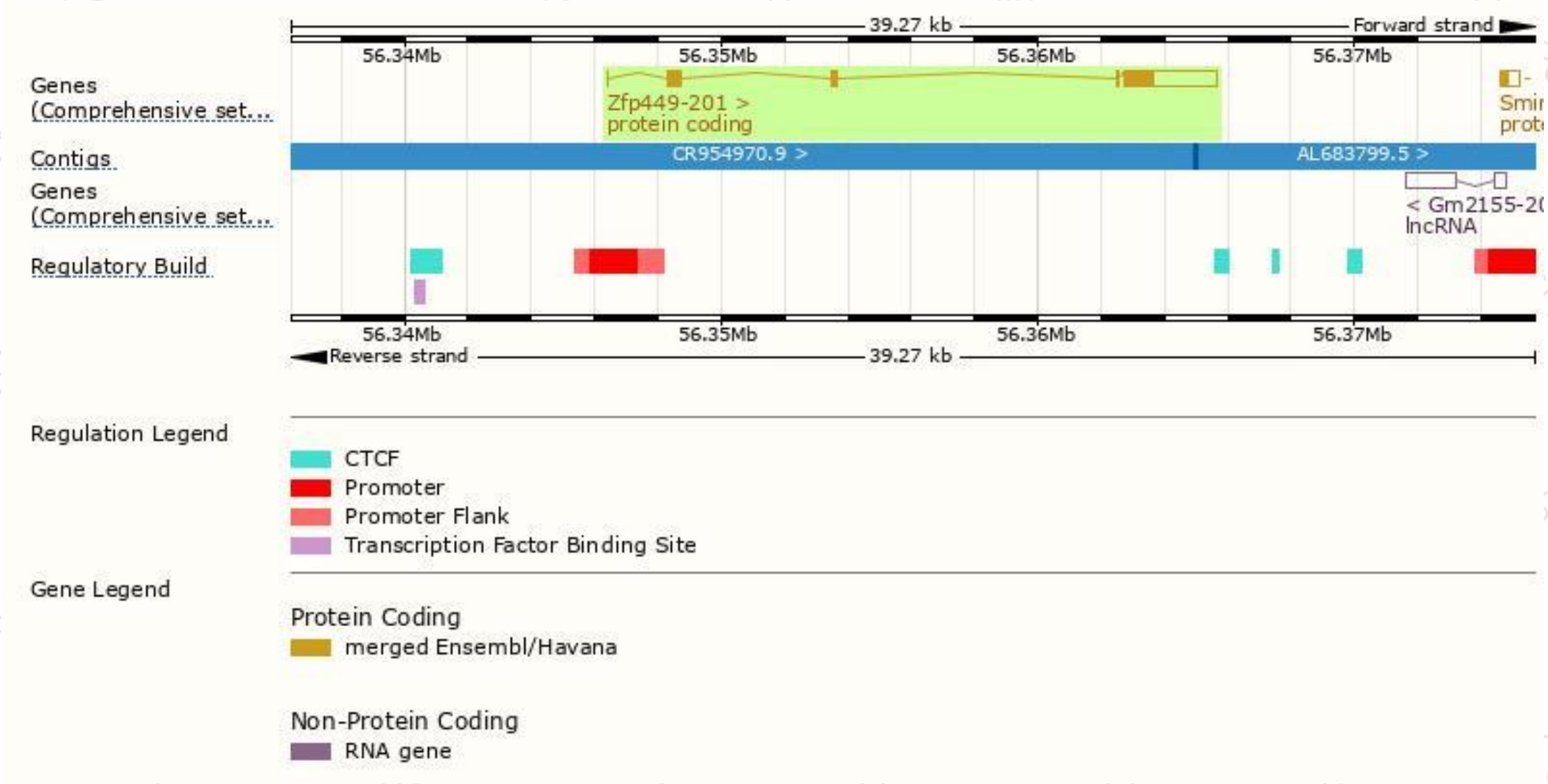
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp449-201	ENSMUST00000101560.3	3738	518aa	Protein coding	CCDS30143	Q8CB76	TSL:1 GENCODE basic APPRIS P1

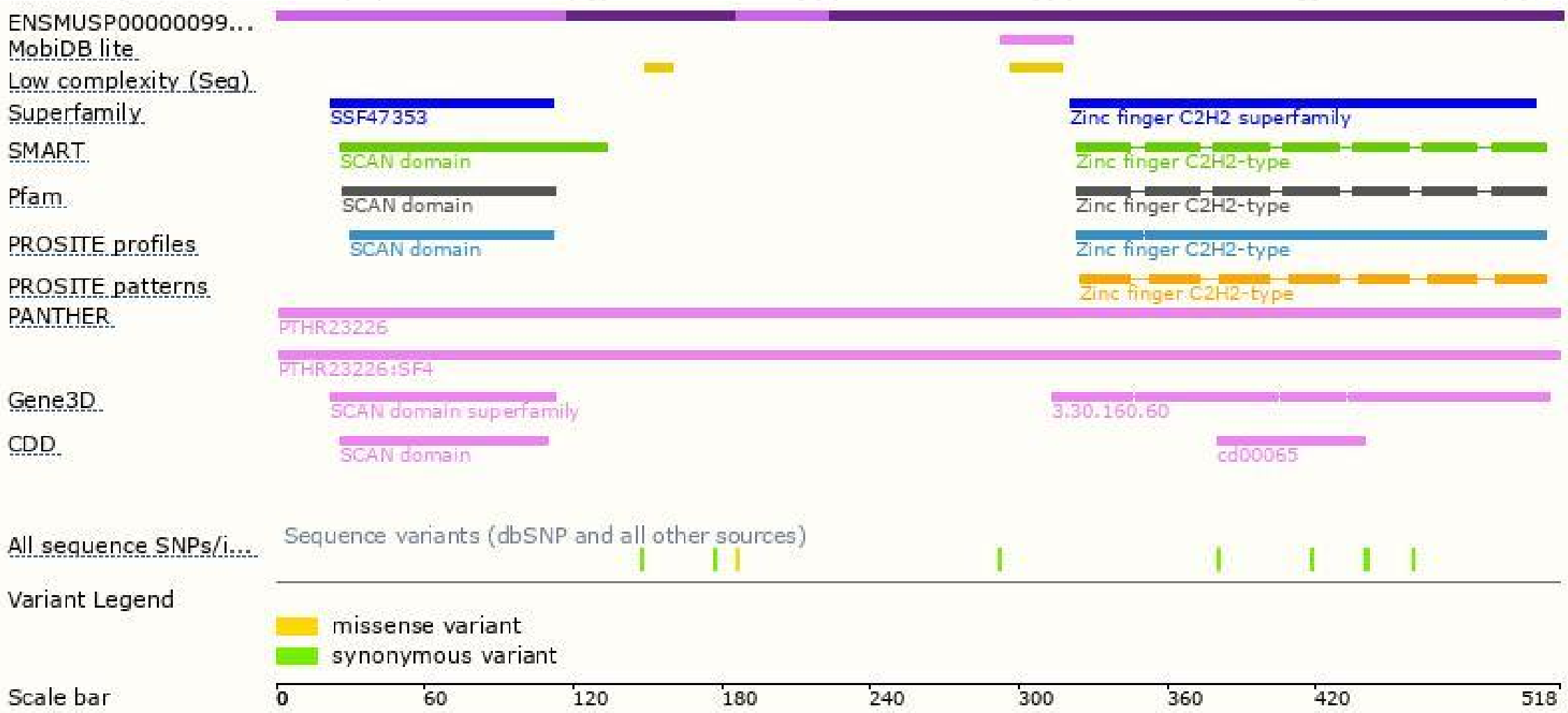
The strategy is based on the design of *Zfp449-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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