

Spata4 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Spata4

Project type

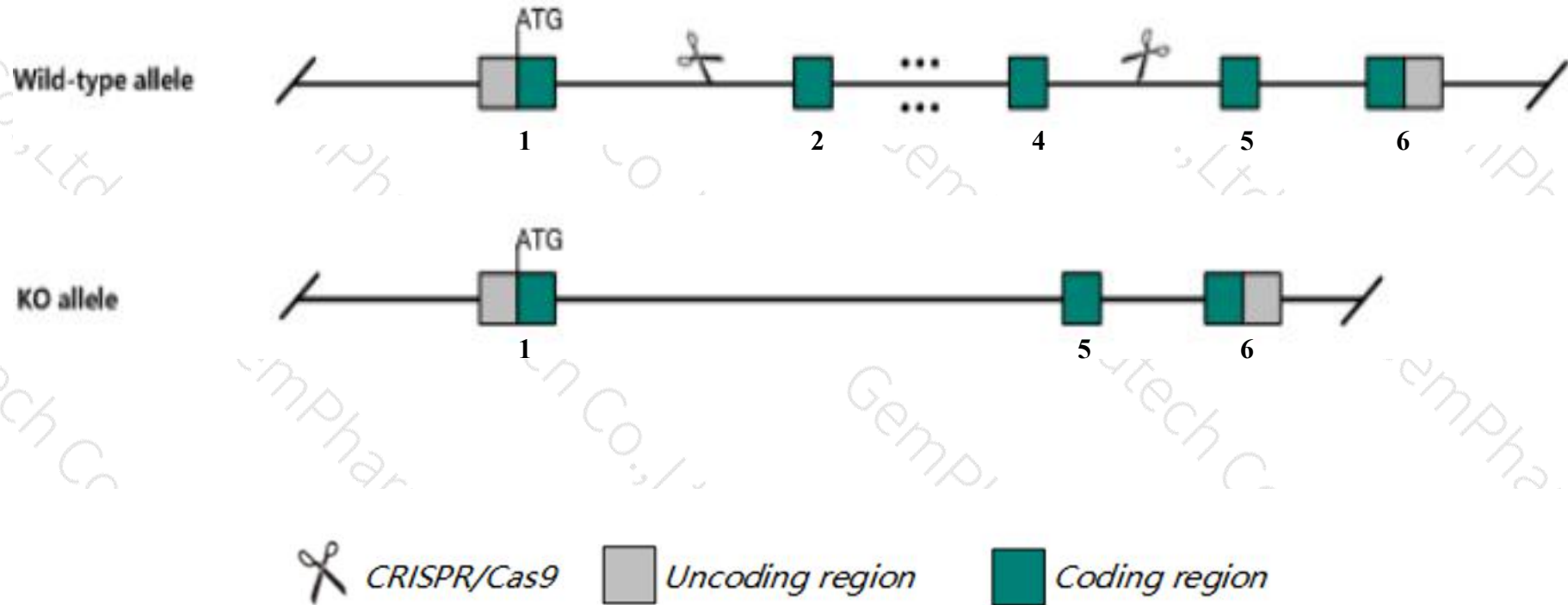
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Spata4* gene. The schematic diagram is as follows:



- The *Spata4* gene has 1 transcript. According to the structure of *Spata4* gene, exon2-exon4 of *Spata4-201* (ENSMUST00000033917.6) transcript is recommended as the knockout region. The region contains 470bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Spata4* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Male mice homozygous for a mutation are viable and show normal fertility.
- The KO region contains functional region of the *5330439A09Rik* gene. Knockout the region may affect the function of *5330439A09Rik* gene.
- The *Spata4* gene is located on the Chr8. 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)

Spata4 spermatogenesis associated 4 [*Mus musculus* (house mouse)]

Gene ID: 69281, updated on 13-Mar-2020

Summary

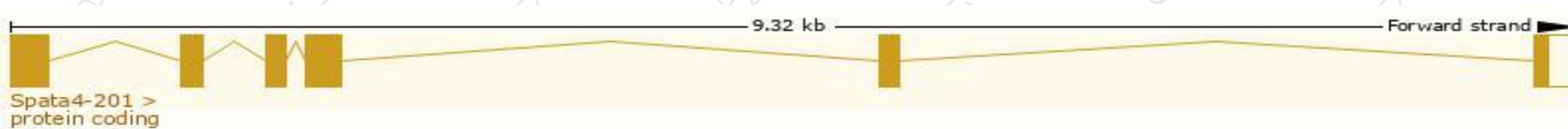
Official Symbol	Spata4 provided by MGI
Official Full Name	spermatogenesis associated 4 provided by MGI
Primary source	MGI:MGI:1916531
See related	Ensembl:ENSMUSG000000031518
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Srg2; TSARG2; 1700001N01Rik
Expression	Restricted expression toward testis adult (RPKM 240.1) See more
Orthologs	human all

Transcript information (Ensembl)

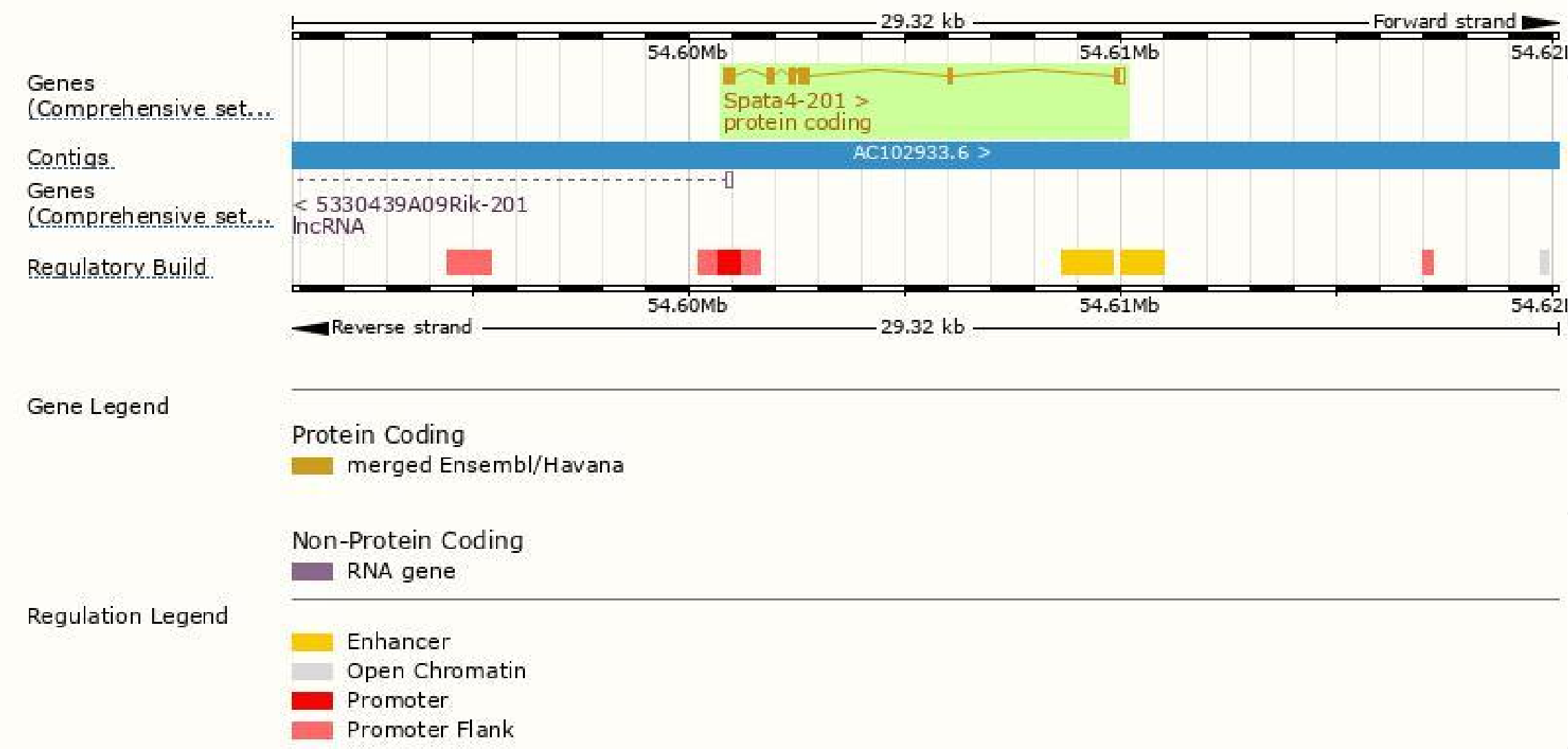
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Spata4-201	ENSMUST00000033917.6	1057	295aa	Protein coding	CCDS22308	Q8K3V1	TSL:1 GENCODE basic APPRIS P1

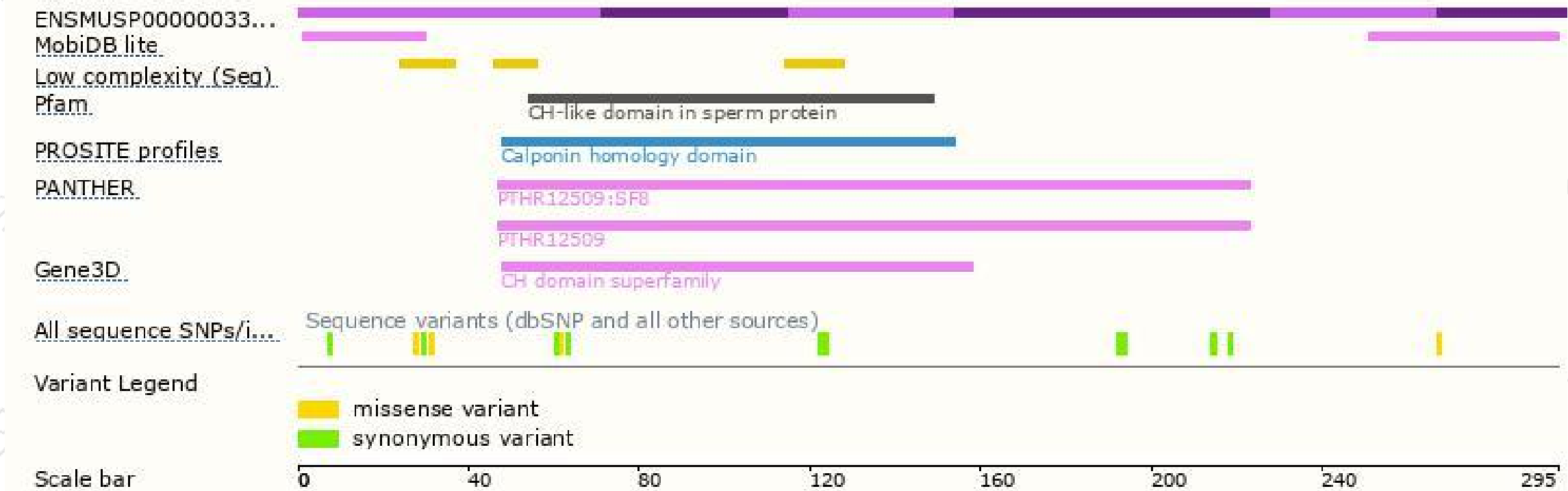
The strategy is based on the design of *Spata4-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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