

Spaca3 Cas9-KO Strategy

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Project Overview

Project Name

Spaca3

Project type

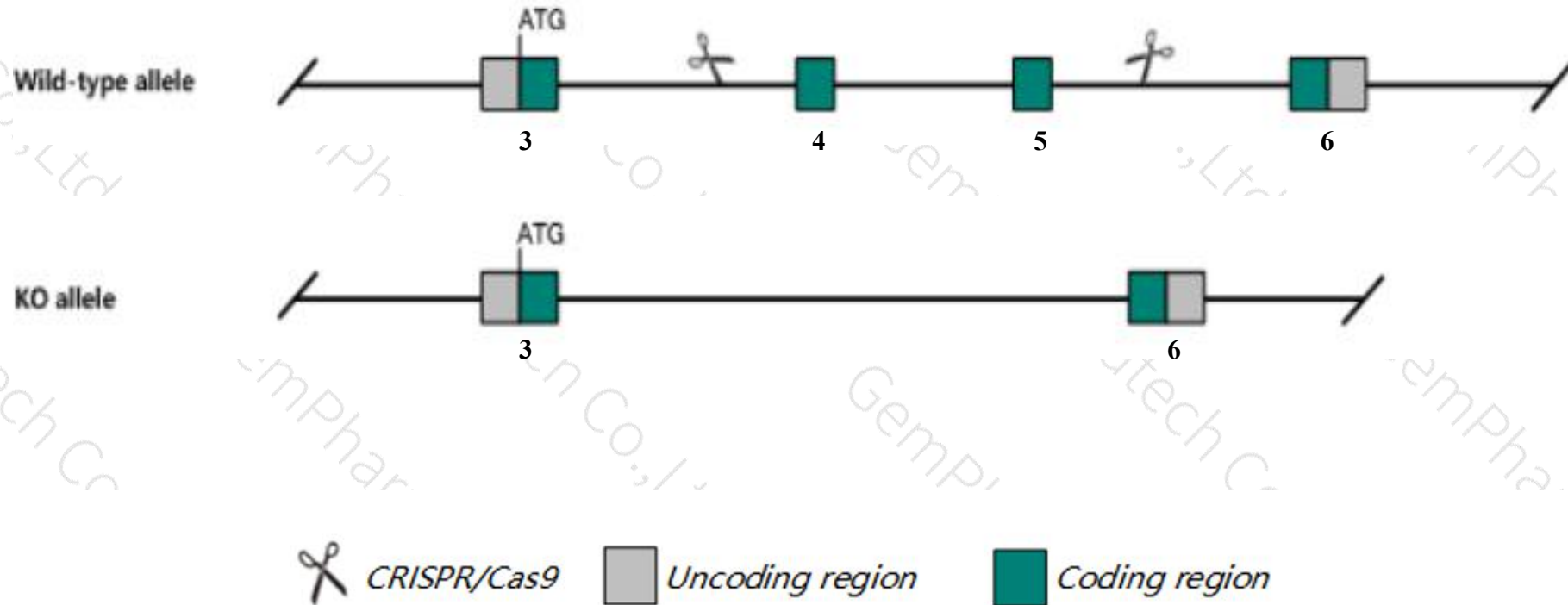
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Spaca3* gene. The schematic diagram is as follows:



- The *Spaca3* gene has 2 transcripts. According to the structure of *Spaca3* gene, exon4-exon5 of *Spaca3*-202(ENSMUST00000103223.7) transcript is recommended as the knockout region. The region contains 238bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Spaca3* 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.

- According to the existing MGI data, male mice homozygous for a mutation are viable and show normal fertility.
- The *Spaca3* gene is located on the Chr11. 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)

Spaca3 sperm acrosome associated 3 [Mus musculus (house mouse)]

Gene ID: 75622, updated on 13-Mar-2020

Summary



Official Symbol Spaca3 provided by [MGI](#)

Official Full Name sperm acrosome associated 3 provided by [MGI](#)

Primary source [MGI:MGI:1922872](#)

See related [Ensembl:ENSMUSG00000053184](#)

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 1700025M08Rik, ALLP17, Lyc3, SLLP1, mSLLP1

Expression Restricted expression toward testis adult (RPKM 156.7) [See more](#)

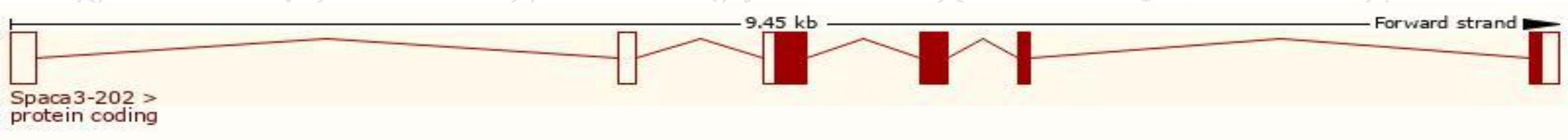
Orthologs [human all](#)

Transcript information (Ensembl)

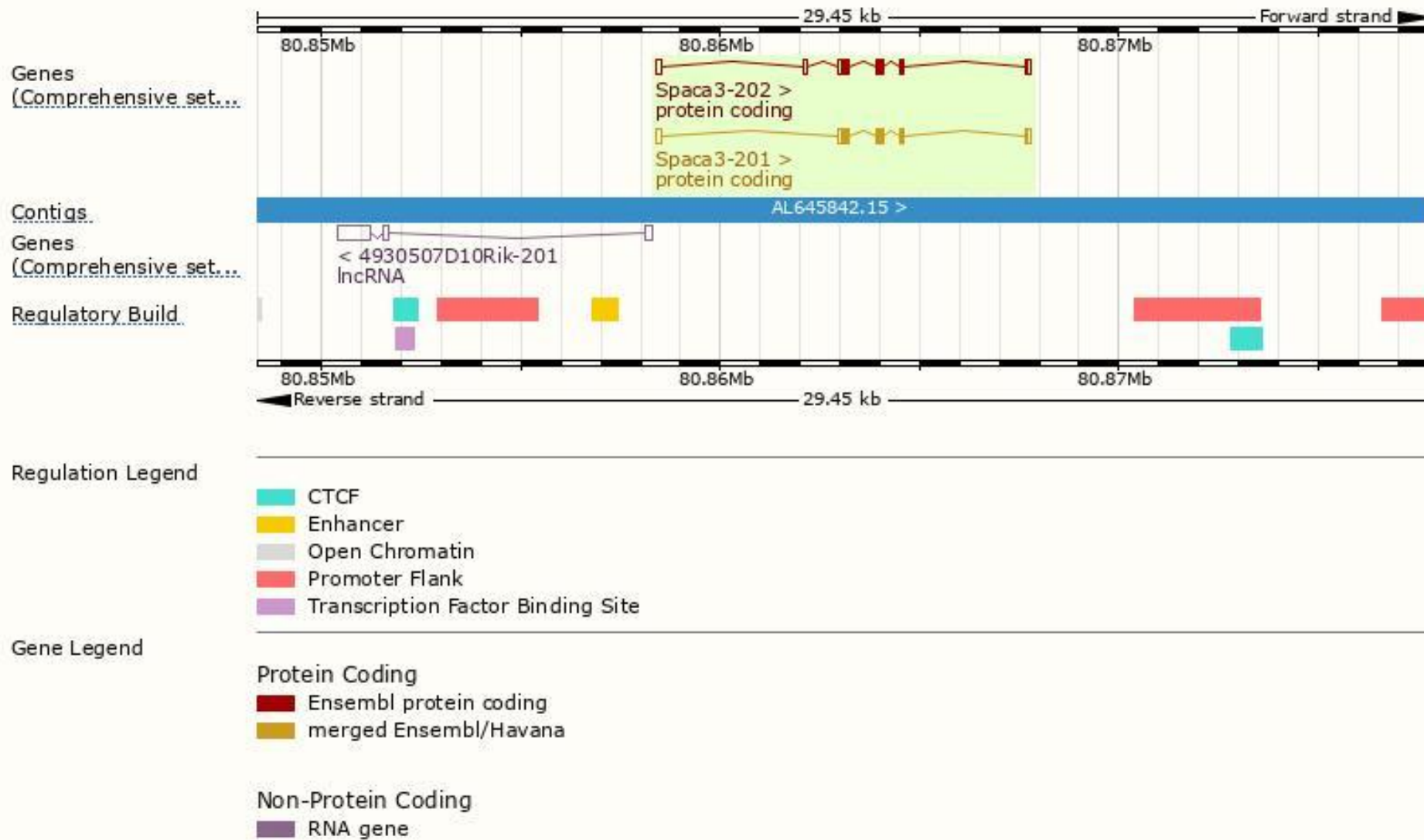
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Spaca3-202	ENSMUST00000103223.7	947	163aa	Protein coding	CCDS25136	A0A077S9M6_Q9D9X8	TSL:1 GENCODE basic APPRIS P1
Spaca3-201	ENSMUST00000103222.3	831	163aa	Protein coding	CCDS25136	A0A077S9M6_Q9D9X8	TSL:1 GENCODE basic APPRIS P1

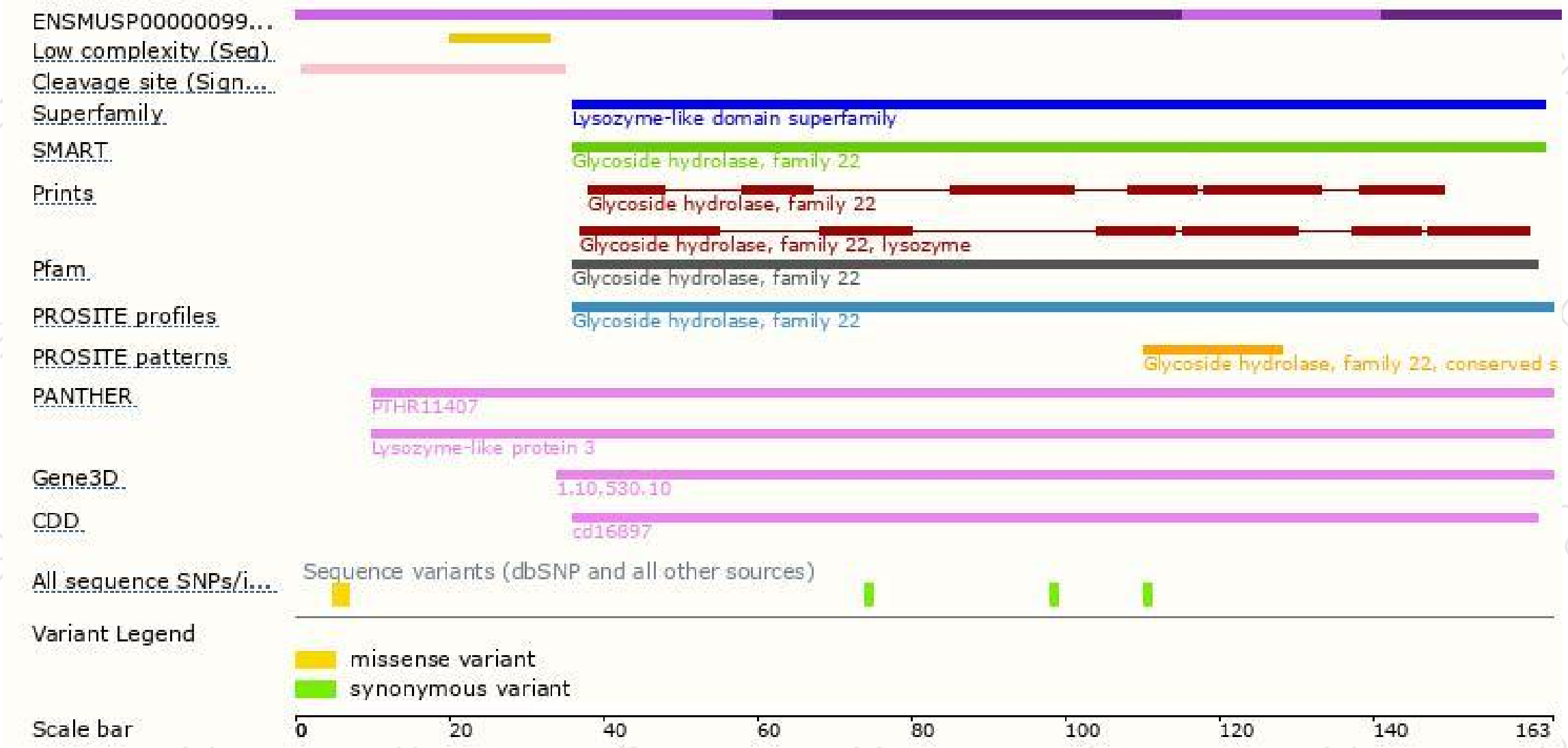
The strategy is based on the design of *Spaca3-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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