Msl2 Cas9-CKO Strategy

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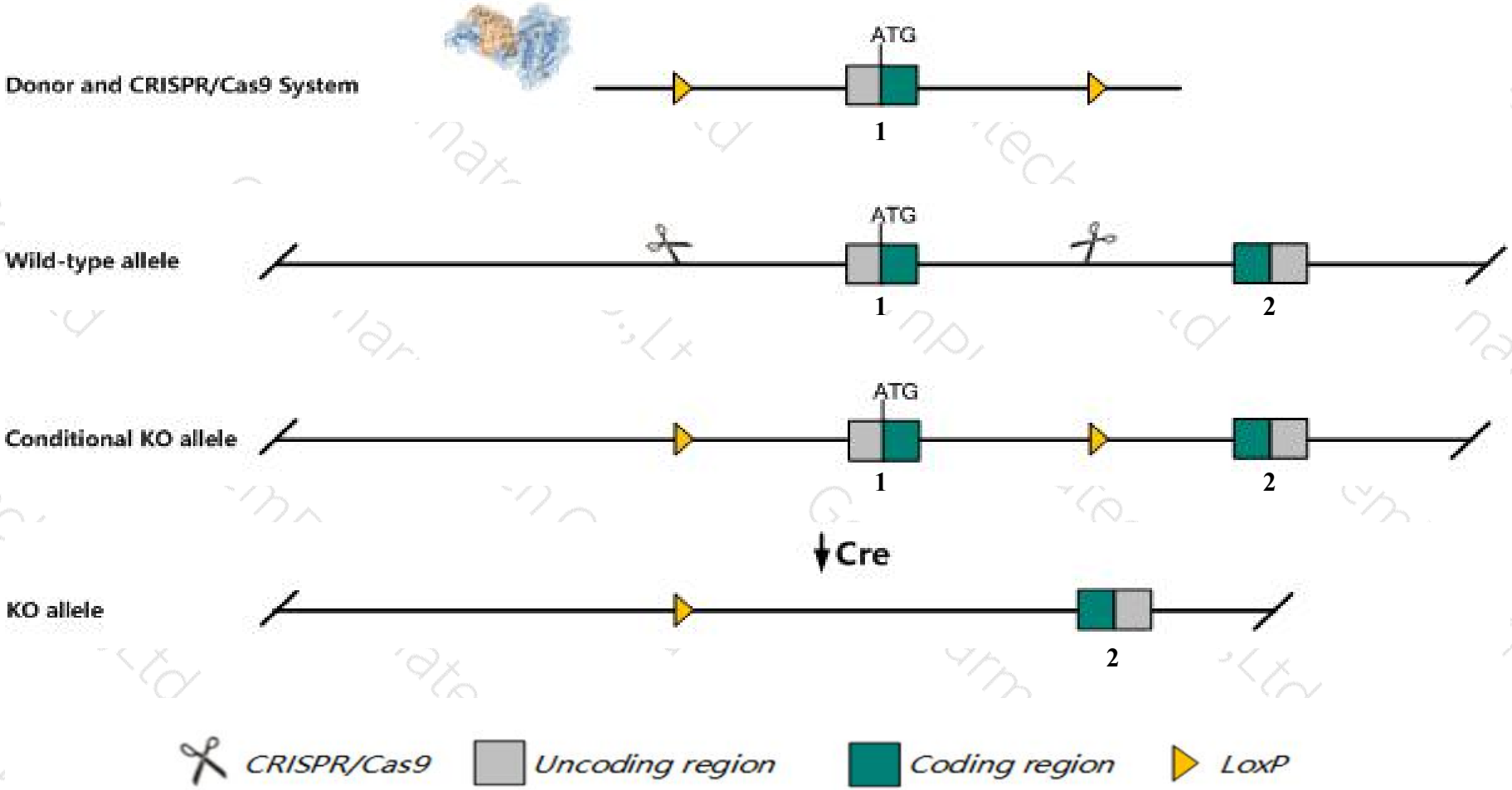
Project Overview

Project Name	***Msl2***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Msl2* gene. The schematic diagram is as follows:



Technical routes

- The *Msl2* gene has 2 transcripts. According to the structure of *Msl2* gene, exon1 of *Msl2-201* (ENSMUST00000085177.4) 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 *Msl2* 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.

Notice

➢ This strategy knocks out ATG and there may be a risk of identifying new ATG translations of other proteins.

➢The *Msl2* gene is located on the Chr9. 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）

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Msl2 MSL complex subunit 2 [*Mus musculus* (house mouse)]

Gene ID: 77853, updated on 12-Aug-2019

Summary

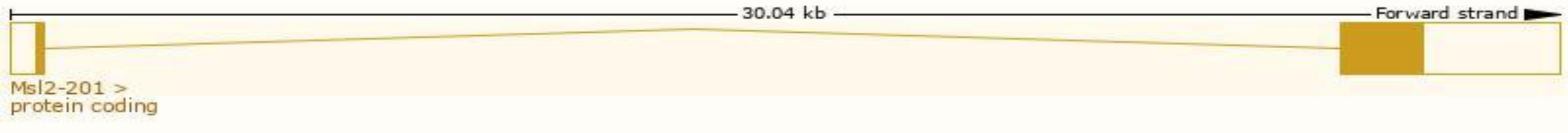
Official Symbol	Msl2 provided by MGI
Official Full Name	MSL complex subunit 2 provided by MGI
Primary source	MGI:MGI:1925103
See related	Ensembl:ENSMUSG00000066415
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Msl2l1; Rnf184; E130103E02Rik
Annotation information	Annotation category: suggests misassembly
Expression	Ubiquitous expression in thymus adult (RPKM 14.4), spleen adult (RPKM 9.6) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

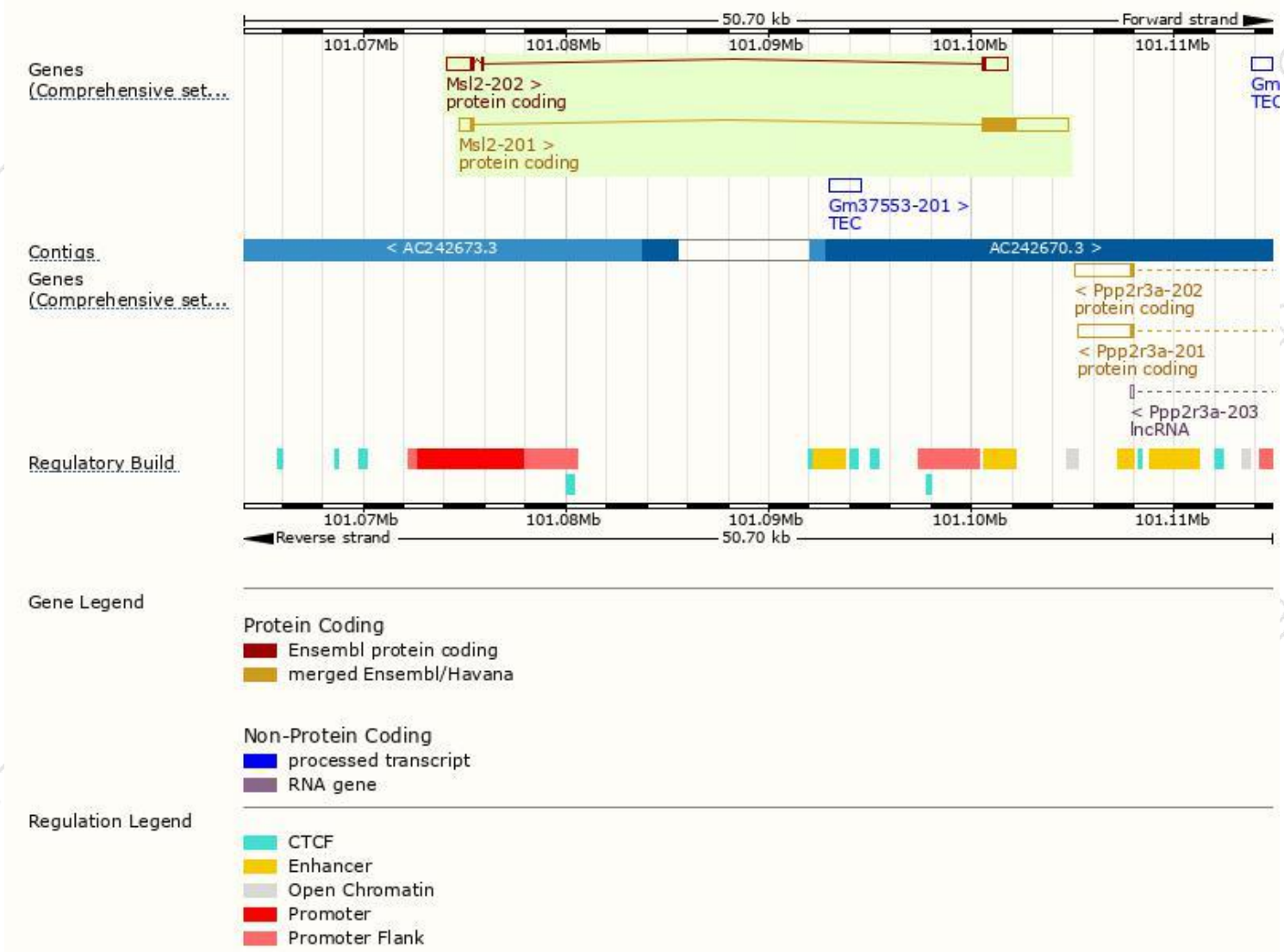
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Msl2-201	ENSMUST00000085177.4	4889	577aa	Protein coding	CCDS85717	Q69ZF8	TSL:1 GENCODE basic APPRIS P1
Msl2-202	ENSMUST00000189616.1	2612	100aa	Protein coding	-	A0A087WNL5	TSL:5 GENCODE basic

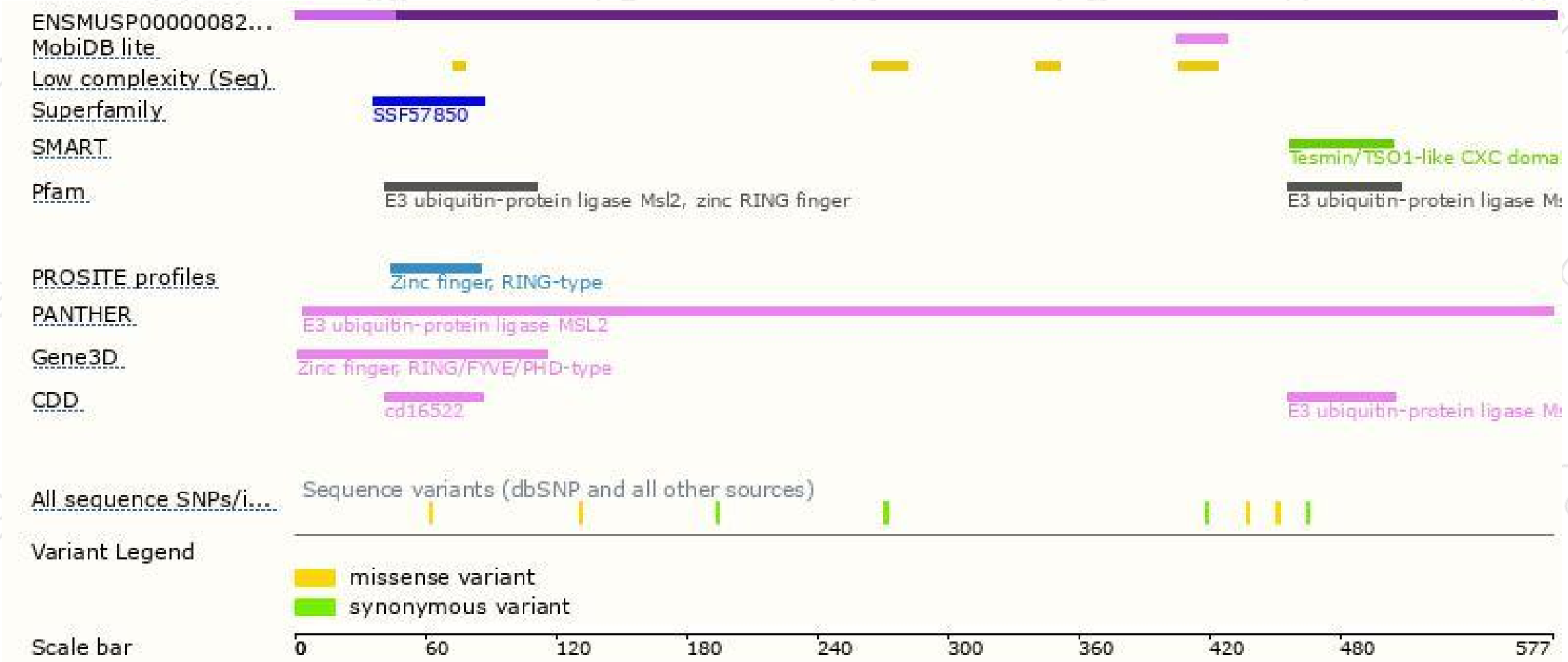
The strategy is based on the design of *Msl2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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