



# ***Srp68 Cas9-CKO Strategy***

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<b>Design Date:</b>	<b>2020-1-13</b>



# Project Overview

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<b>Project Name</b>	<b><i>Srp68</i></b>
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<b>Project type</b>	<b>Cas9-CKO</b>
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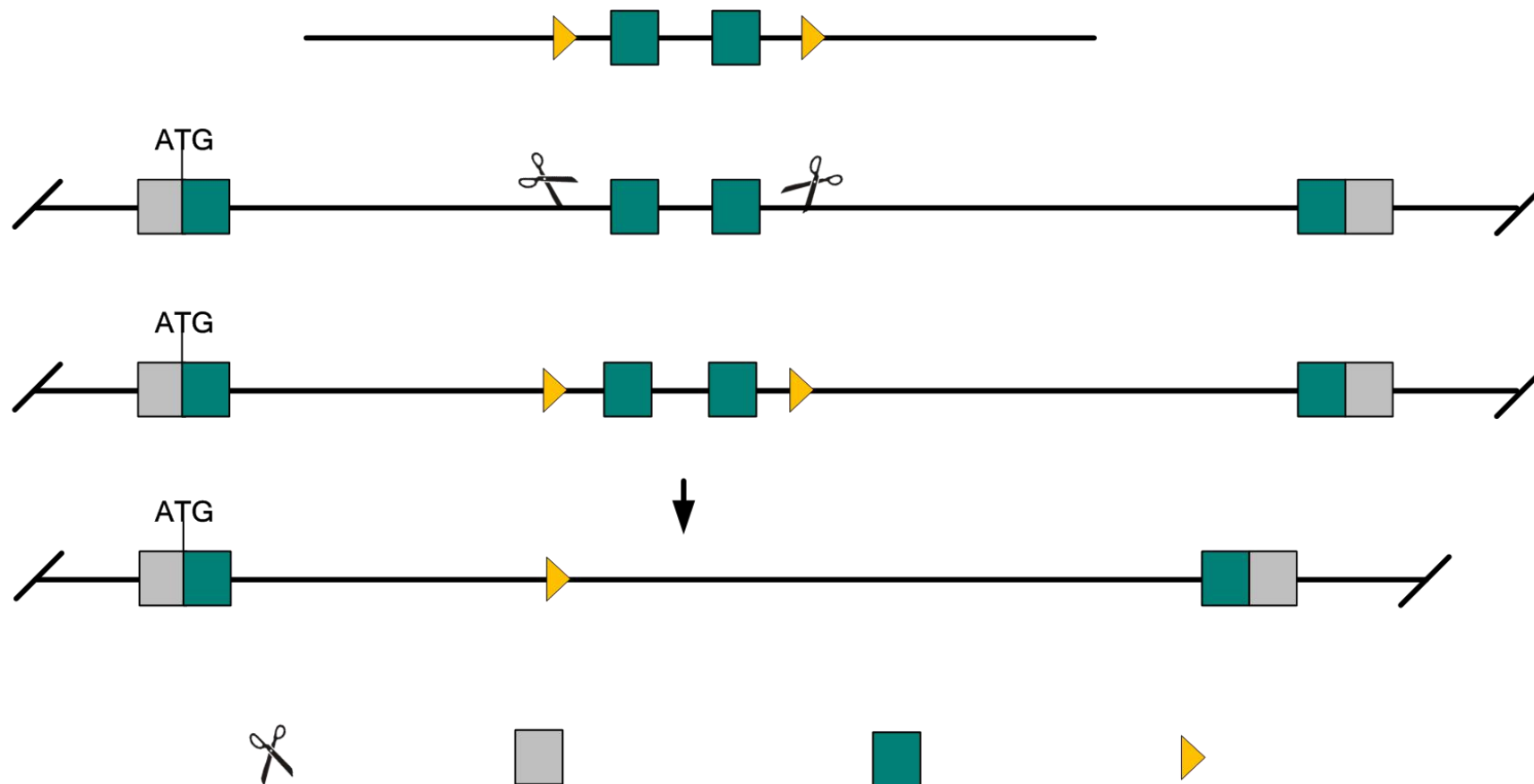
<b>Strain background</b>	<b>C57BL/6JGpt</b>
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# Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Srp68* gene. The schematic diagram is as follows:





- The *Srp68* gene has 4 transcripts. According to the structure of *Srp68* gene, exon2-exon3 of *Srp68*-201 (ENSMUST00000021133.15) transcript is recommended as the knockout region. The region contains 181bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Srp68* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA 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 or cell types.



- Transcript *Srp68-204* may not be affected.
- The *Srp68* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.



## Srp68 signal recognition particle 68 [ *Mus musculus* (house mouse) ]

Gene ID: 217337, updated on 5-Jan-2020

### Summary








Official Symbol	Srp68 provided by <a href="#">MGI</a>
Official Full Name	signal recognition particle 68 provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:1917447</a>
See related	<a href="#">Ensembl:ENSMUSG00000020780</a>
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610024I03Rik
Expression	Ubiquitous expression in placenta adult (RPKM 39.4), limb E14.5 (RPKM 36.1) and 28 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>



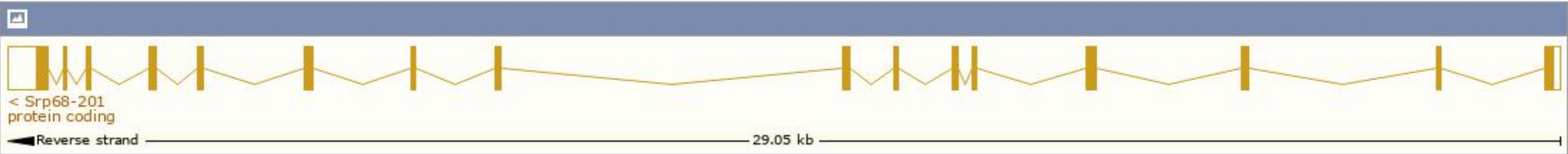
# Transcript information      Ensembl

The gene has 4 transcripts, and all transcripts are shown below:

Show/hide columns (1 hidden) Filter 

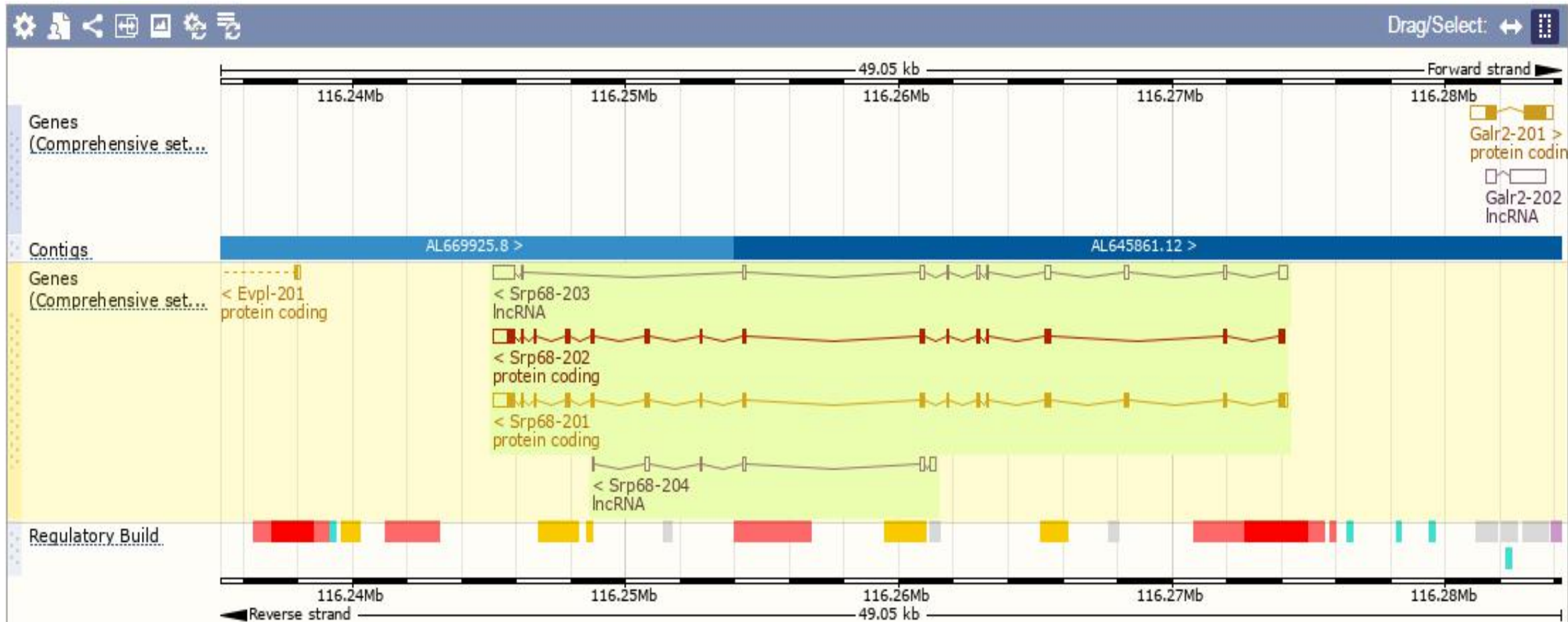
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Srp68-201	<a href="#">ENSMUST00000021133.15</a>	2526	<a href="#">625aa</a>	 Protein coding	<a href="#">CCDS25662</a>	<a href="#">Q8BMA6</a>	TSL:1 GENCODE basic APPRIS P1
Srp68-202	<a href="#">ENSMUST00000106425.3</a>	2330	<a href="#">587aa</a>	 Protein coding	-	<a href="#">A2AAN2</a>	TSL:5 GENCODE basic
Srp68-203	<a href="#">ENSMUST00000127205.7</a>	1979	No protein	 lncRNA	-	-	TSL:5
Srp68-204	<a href="#">ENSMUST00000128808.1</a>	703	No protein	 lncRNA	-	-	TSL:3

The strategy is based on the design of *Srp68-201* 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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