Exoc3l2 Cas9-CKO *Strategy*

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Project Overview

Project Name	***Exoc3l2***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

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This model will use CRISPR/Cas9 technology to edit the *Exoc3l2* gene. The schematic diagram is as follows:

Technical routes

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- The *Exoc3l2* gene has 2 transcripts.According to the structure of *Exoc3l2* gene, exon2-11 of *Exoc3l2*-202 (ENSMUST00000137613.8) transcript is recommended as the knockout region.The region contains most 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 *Exoc3l2* 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.

Notice

- The *Exoc3l2* gene is located on the Chr7. 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.

Gene information NCBI

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Exoc3l2 exocyst complex component 3-like 2 [*Mus musculus* (house mouse)]

Gene ID: 74463, updated on 12-Jul-2019

Summary

Official Symbol	Exoc3l2 provided by MGI
Official Full Name	exocyst complex component 3-like 2 provided by MGI
Primary source	MGI:MGI:1921713
See related	Ensembl:ENSMUSG00000011263
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	Gm19857; AU042655; 4933417E01Rik
Expression	Biased expression in adrenal adult (RPKM 22.7), kidney adult (RPKM 13.1) and 13 other tissues See more
Orthologs	human all

Transcript information Ensembl

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

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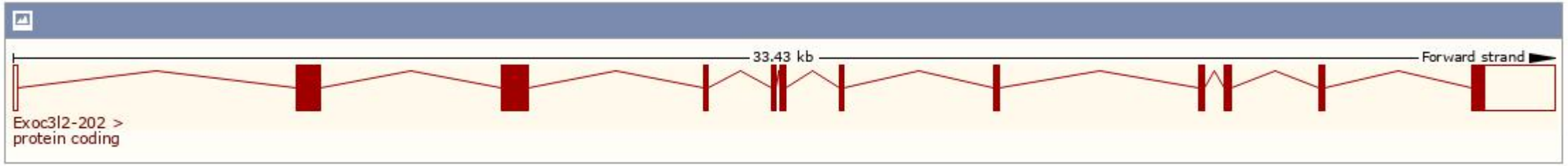
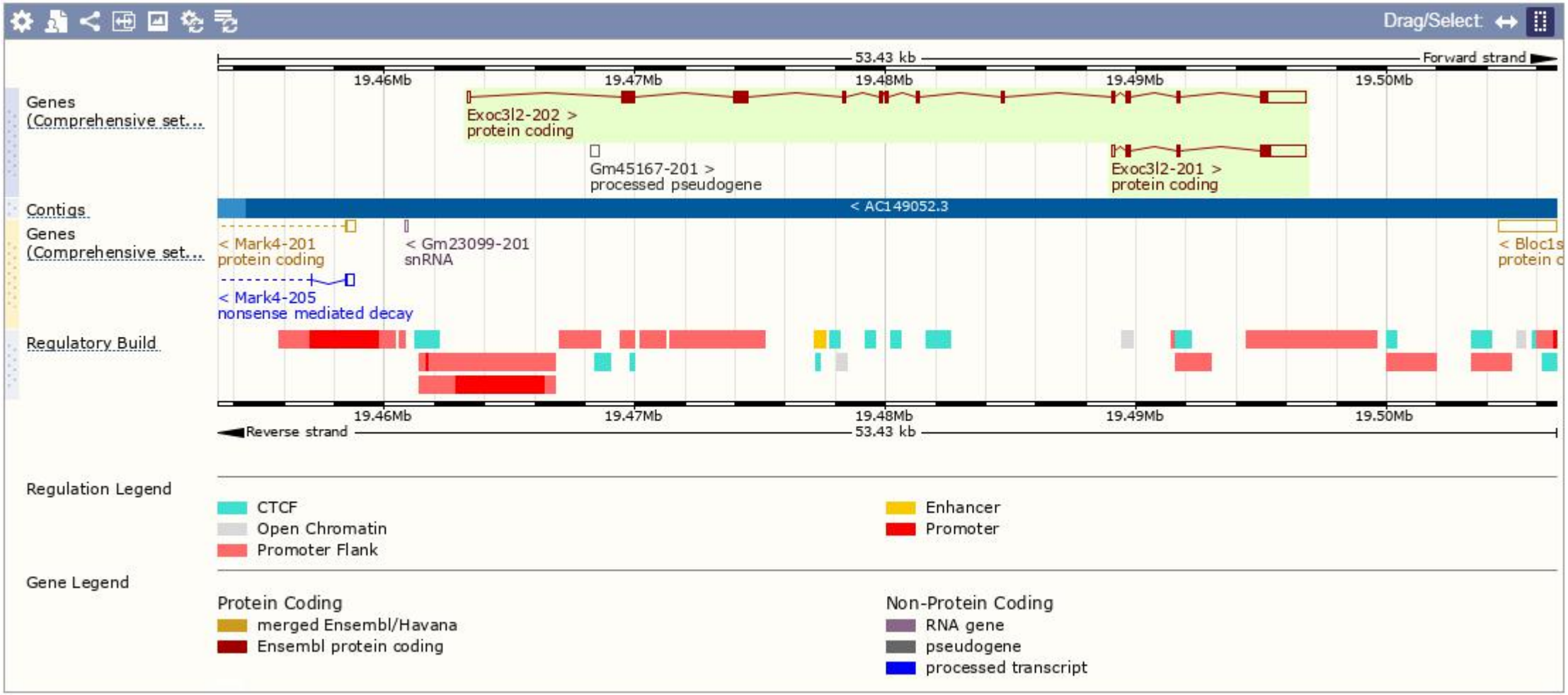
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Exoc3l2-202	ENSMUST00000137613.8	4016	789aa	Protein coding	-	D3YUP5	TSL:5 GENCODE basic APPRIS P1
Exoc3l2-201	ENSMUST00000011407.7	2200	242aa	Protein coding	-	E9Q180	TSL:5 GENCODE basic

The strategy is based on the design of *Exoc3l2*-202 transcript,The transcription is shown below

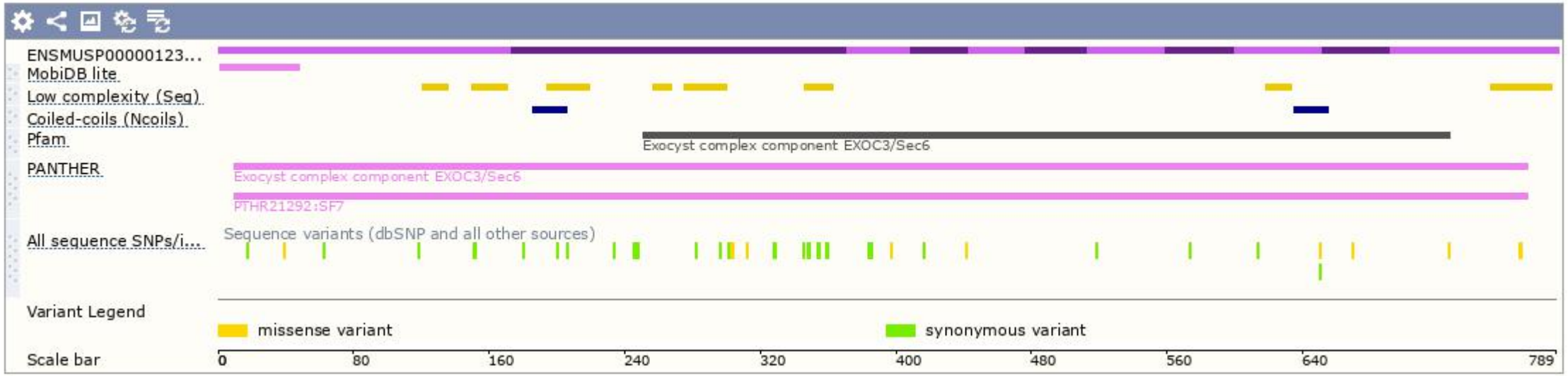


Statistics **Exons:** 12, **Coding exons:** 11, **Transcript length:** 4,016 bps, **Translation length:** 789 residues

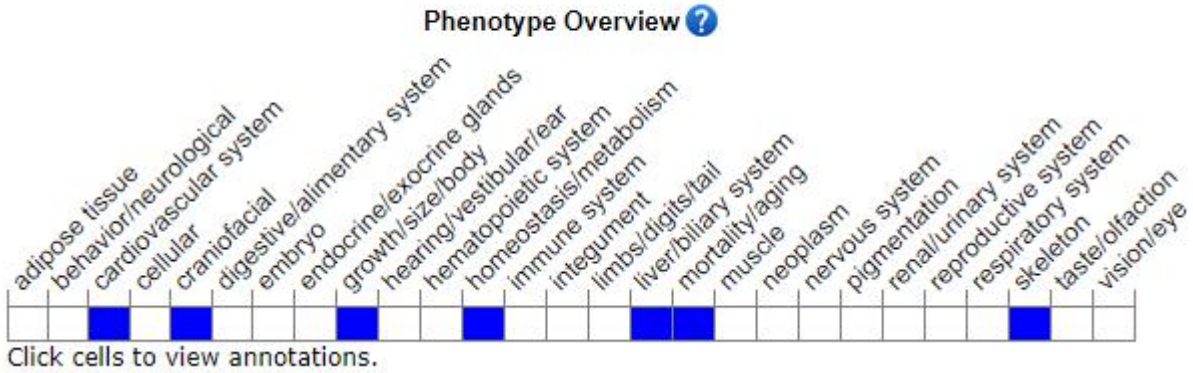
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(http://www.informatics.jax.org/) .

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