Sele Cas9-KO Strategy

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Reviewer:	**Ruirui Zhang**
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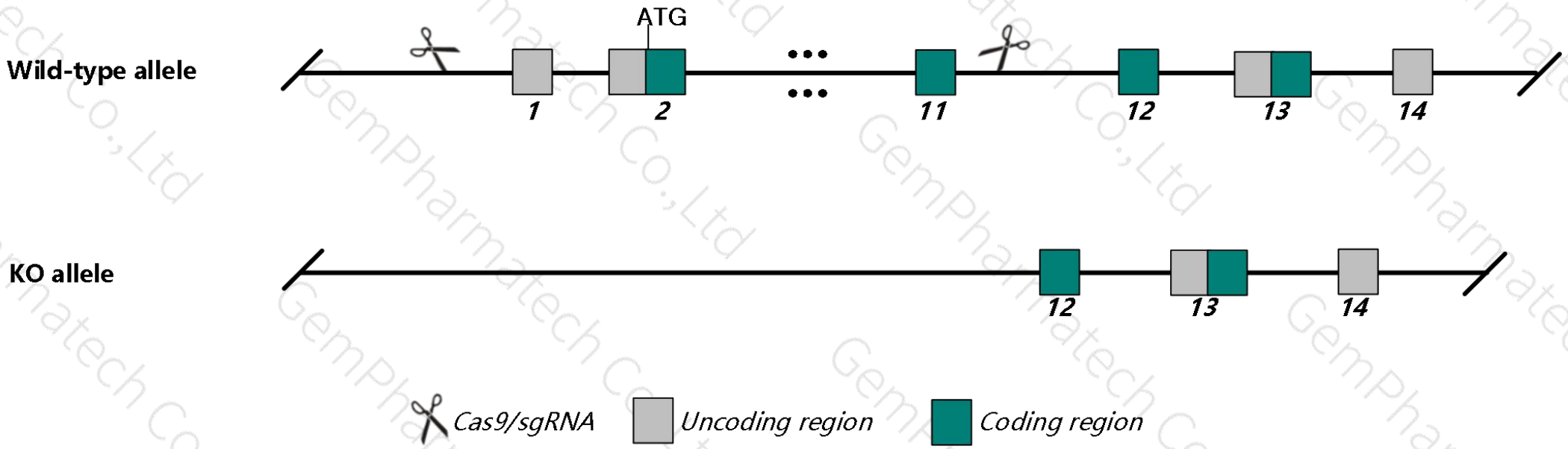
Project Overview

Project Name	***Sele***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

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



Technical routes

➢ The *Sele* gene has 1 transcript. According to the structure of *Sele* gene, exon1-exon11 of *Sele-201* (ENSMUST00000027874.5) transcript is recommended as the knockout region.The region contains most of coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Sele* gene. The brief process is as follows: CRISPR/Cas9 system were

Notice

- According to the existing MGI data,Homozygotes for targeted null mutations exhibit mild defects in neutrophil infiltration during inflammatory responses. When combined with other selectin gene knockouts, more severe defects are present.

- The *Sele* gene is located on the Chr1. 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）

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Sele selectin, endothelial cell [*Mus musculus* (house mouse)]

Gene ID: 20339, updated on 12-Aug-2019

Summary

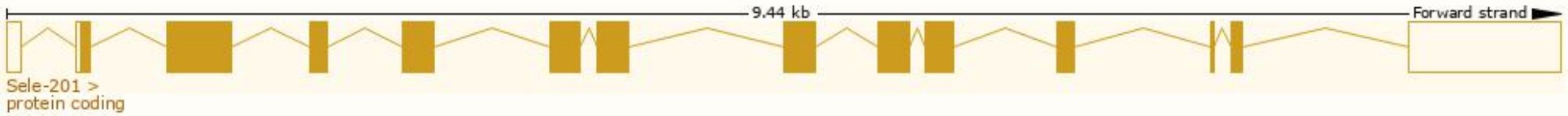
Official Symbol	Sele provided by MGI
Official Full Name	selectin, endothelial cell provided by MGI
Primary source	MGI:MGI:98278
See related	Ensembl:ENSMUSG00000026582
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Elam; CD62E; ELAM-1; LECAM2; E-selectin
Expression	Biased expression in bladder adult (RPKM 5.9), placenta adult (RPKM 2.3) and 1 other tissue See more
Orthologs	human all

Transcript information（Ensembl）

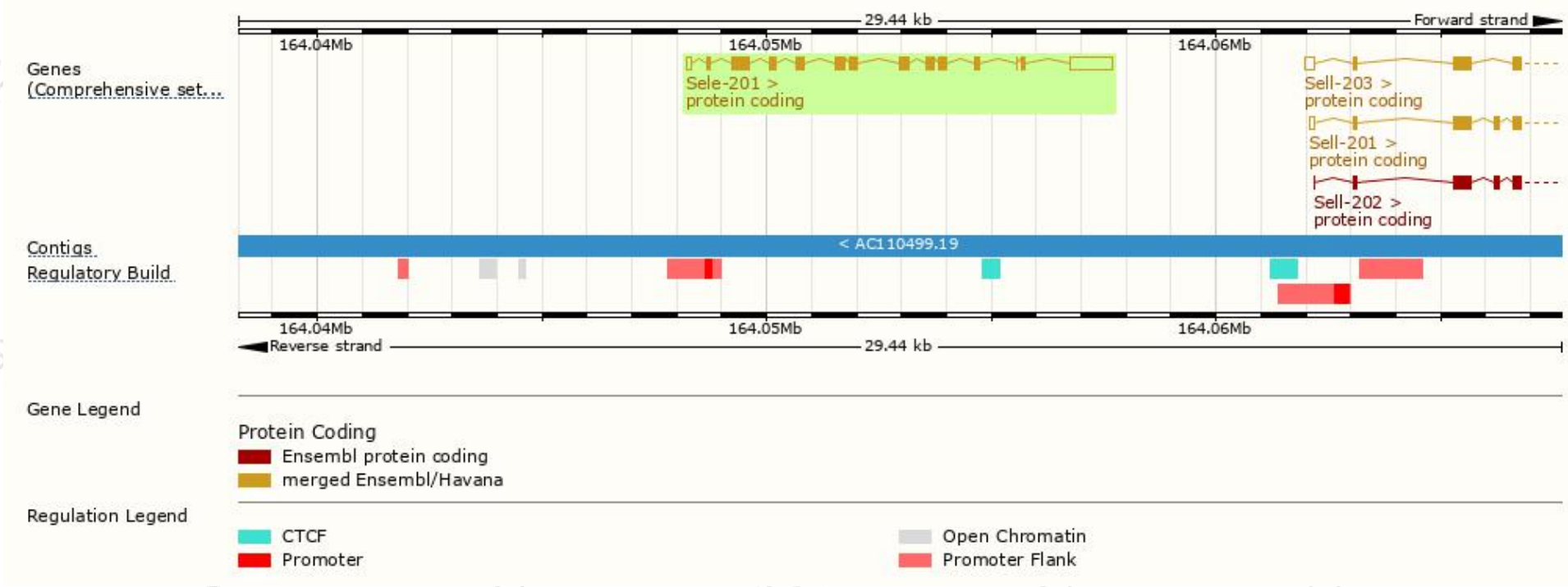
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags		
Sele-201	ENSMUST00000027874.5	2912	619aa	Protein coding	CCDS15432	Q3U5F6	TSL:1	GENCODE basic	APPRIS P1

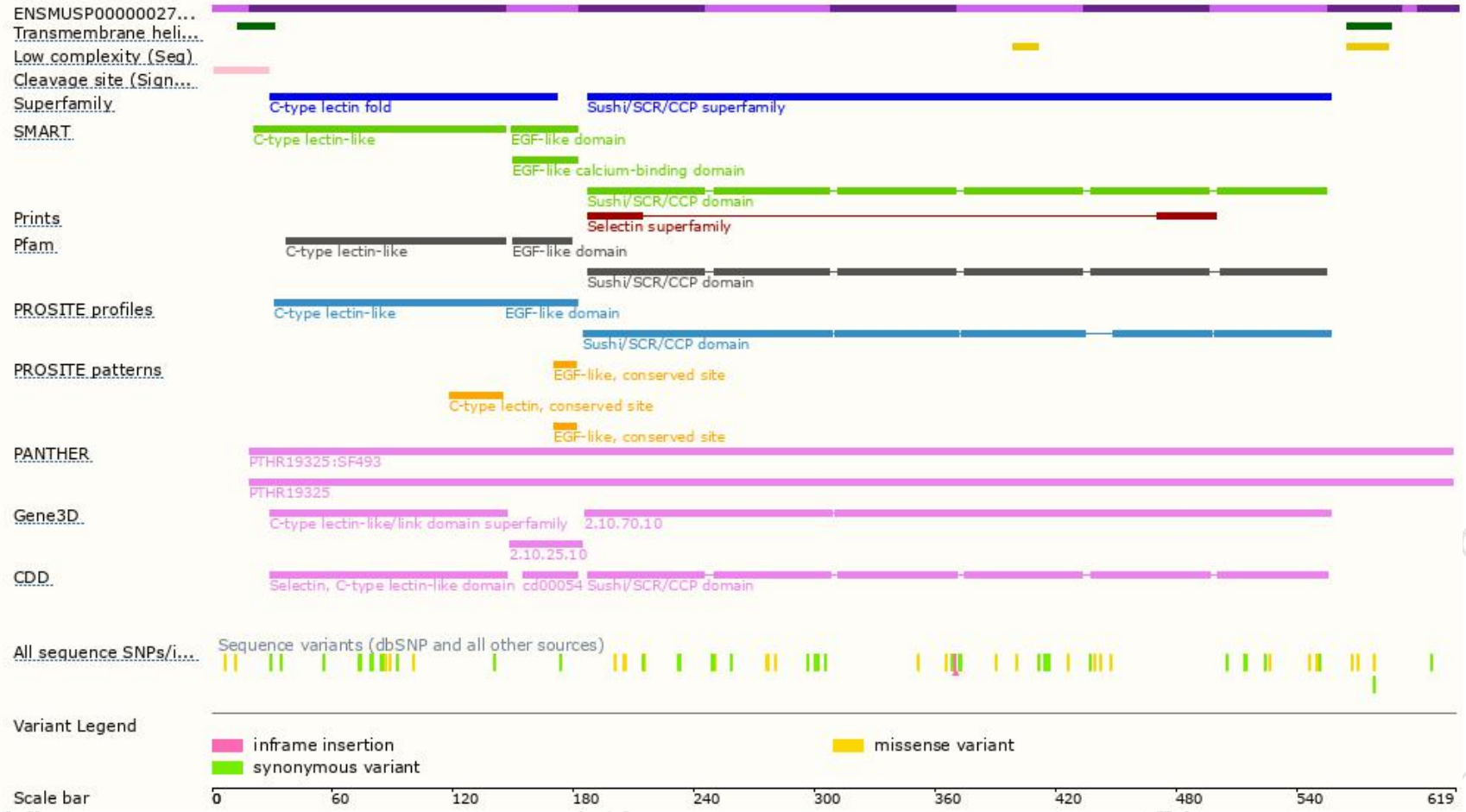
The strategy is based on the design of *Sele-201* transcript,The transcription is shown below



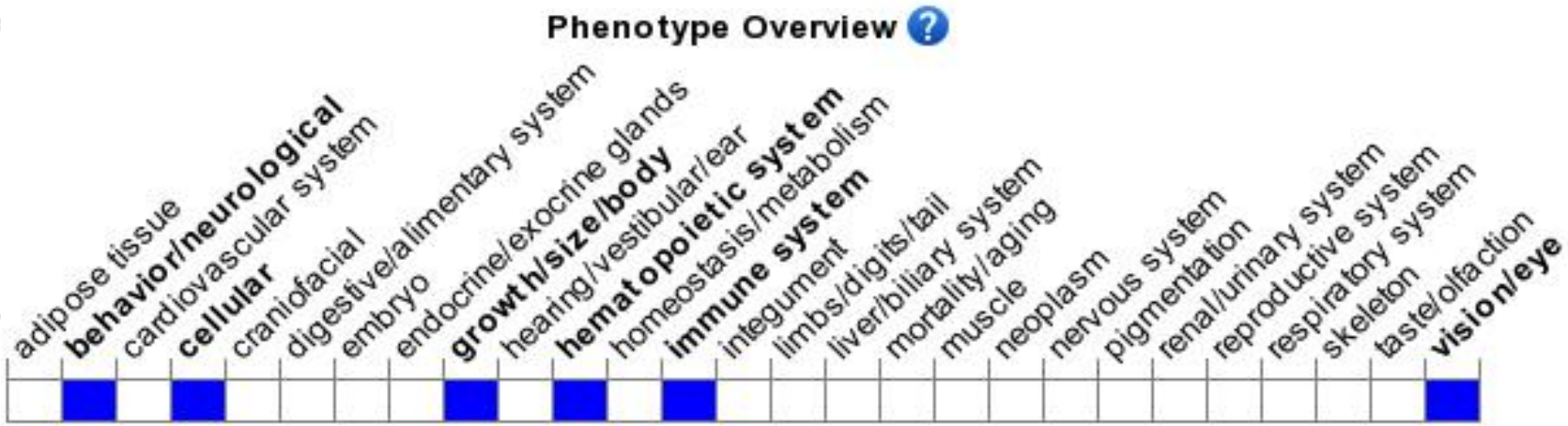
Genomic location distribution



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/).

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

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