Get4 Cas9-CKO Strategy

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Project Overview

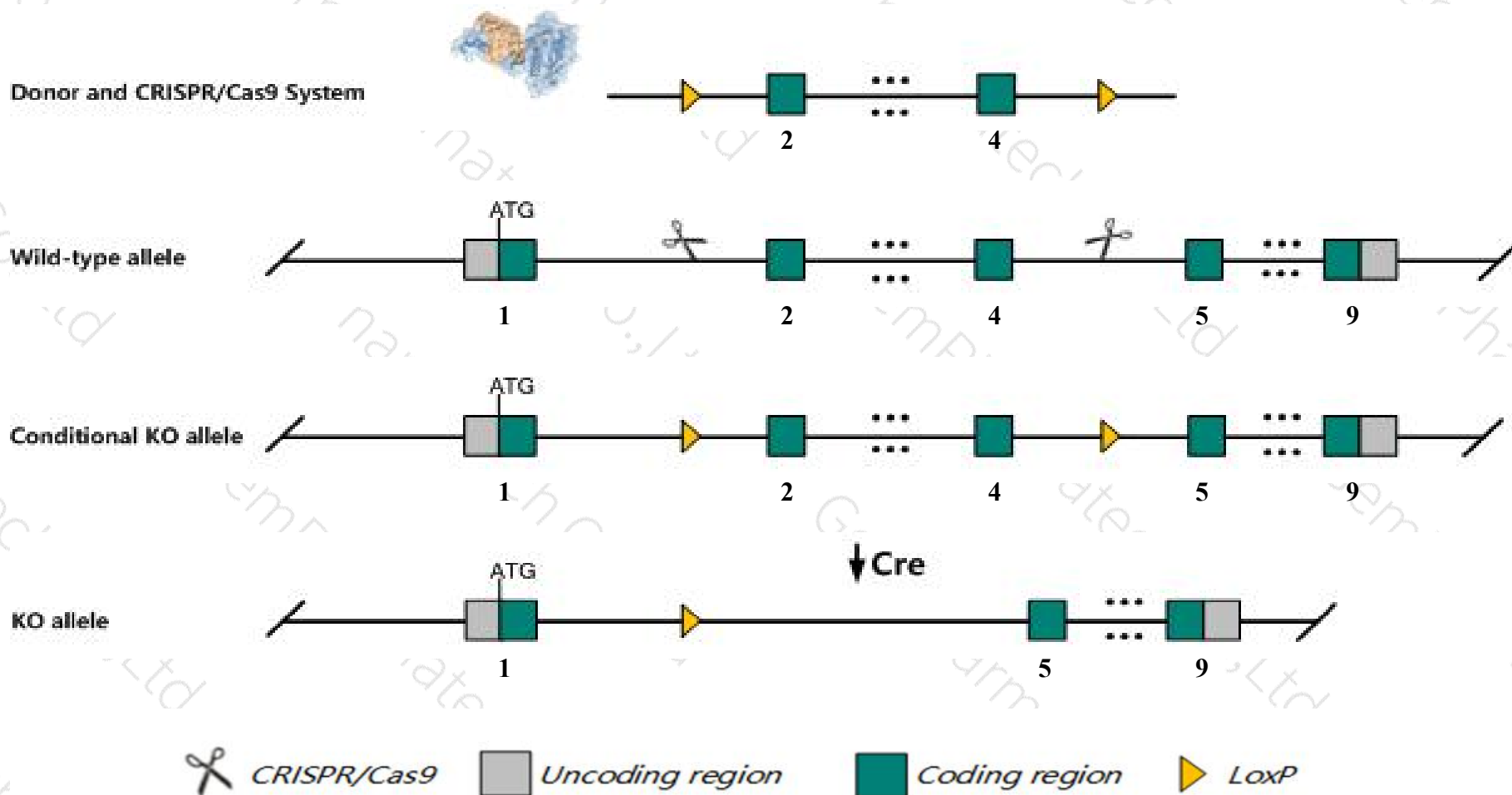|	
Project Name	*Get4*
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Get4* gene. The schematic diagram is as follows:

Technical routes

➤ The *Get4* gene has 6 transcripts. According to the structure of *Get4* gene, exon2-exon4 of *Get4-201* (ENSMUST00000026976.11) transcript is recommended as the knockout region.The region contains 311bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Get4* 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

➢ The *Get4* gene is located on the Chr5. 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）

Get4 golgi to ER traffic protein 4 [Mus musculus (house mouse)]

Gene ID: 67604, updated on 13-Mar-2020

▲ Summary

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Official Symbol	Get4 provided by MGI
Official Full Name	golgi to ER traffic protein 4 provided by MGI
Primary source	MGI:MGI:1914854
See related	Ensembl:ENSMUSG00000025858
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	1110007L15Rik, AW412535, Cee
Expression	Ubiquitous expression in ovary adult (RPKM 65.6), adrenal adult (RPKM 60.9) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Get4-201	ENSMUST00000026976.11	2107	327aa	Protein coding	CCDS19805	Q9D1H7	TSL:1 GENCODE basic APPRIS P3
Get4-202	ENSMUST00000110878.1	1180	274aa	Protein coding	CCDS51682	Q9D1H7	TSL:1 GENCODE basic APPRIS ALT2
Get4-204	ENSMUST00000130326.7	835	246aa	Protein coding	-	D3Z4J5	CDS 3' incomplete TSL:3
Get4-206	ENSMUST00000138508.7	701	197aa	Protein coding	-	D3Z7S0	CDS 3' incomplete TSL:5
Get4-203	ENSMUST00000124420.1	1167	No protein	Retained intron	-	-	TSL:2
Get4-205	ENSMUST00000138059.1	390	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Get4-201* transcript,the transcription is shown below:
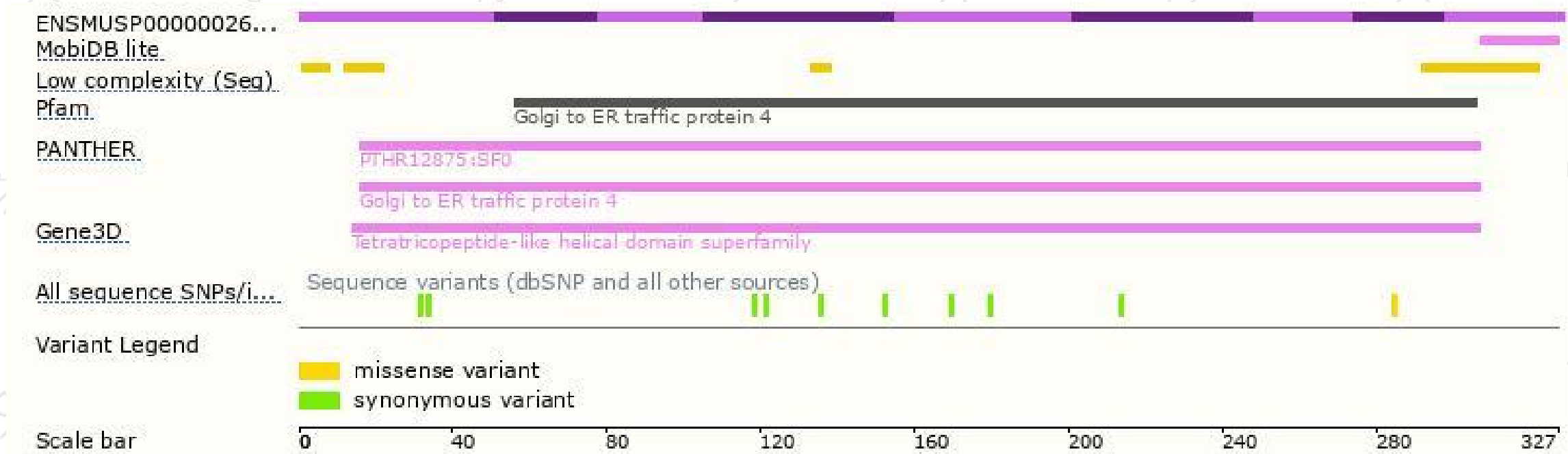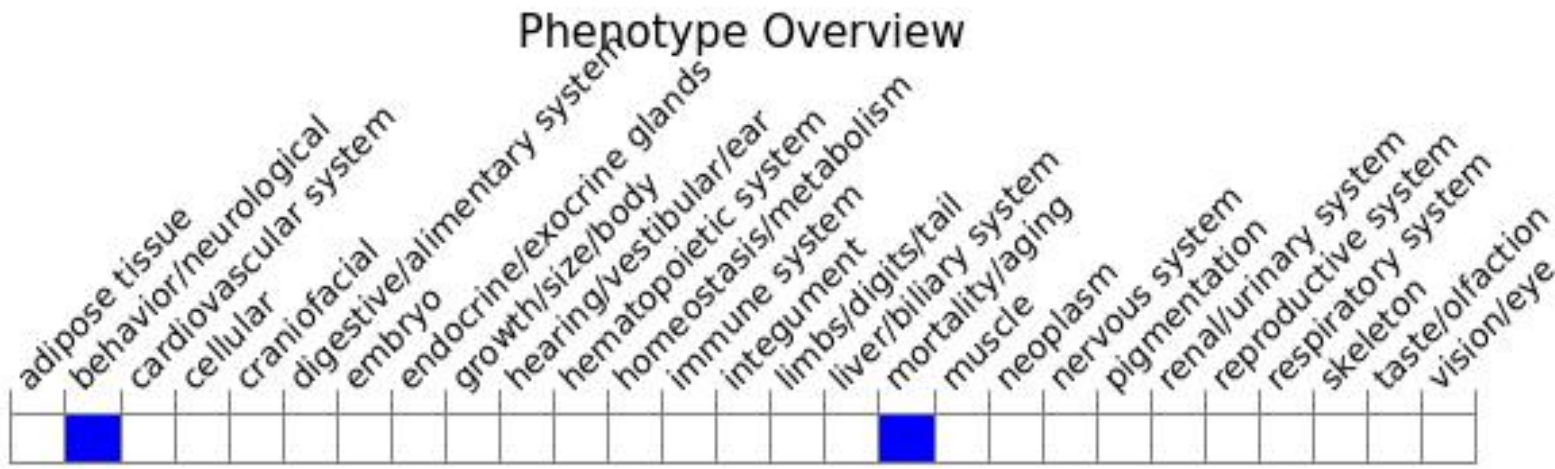
Genomic location distribution
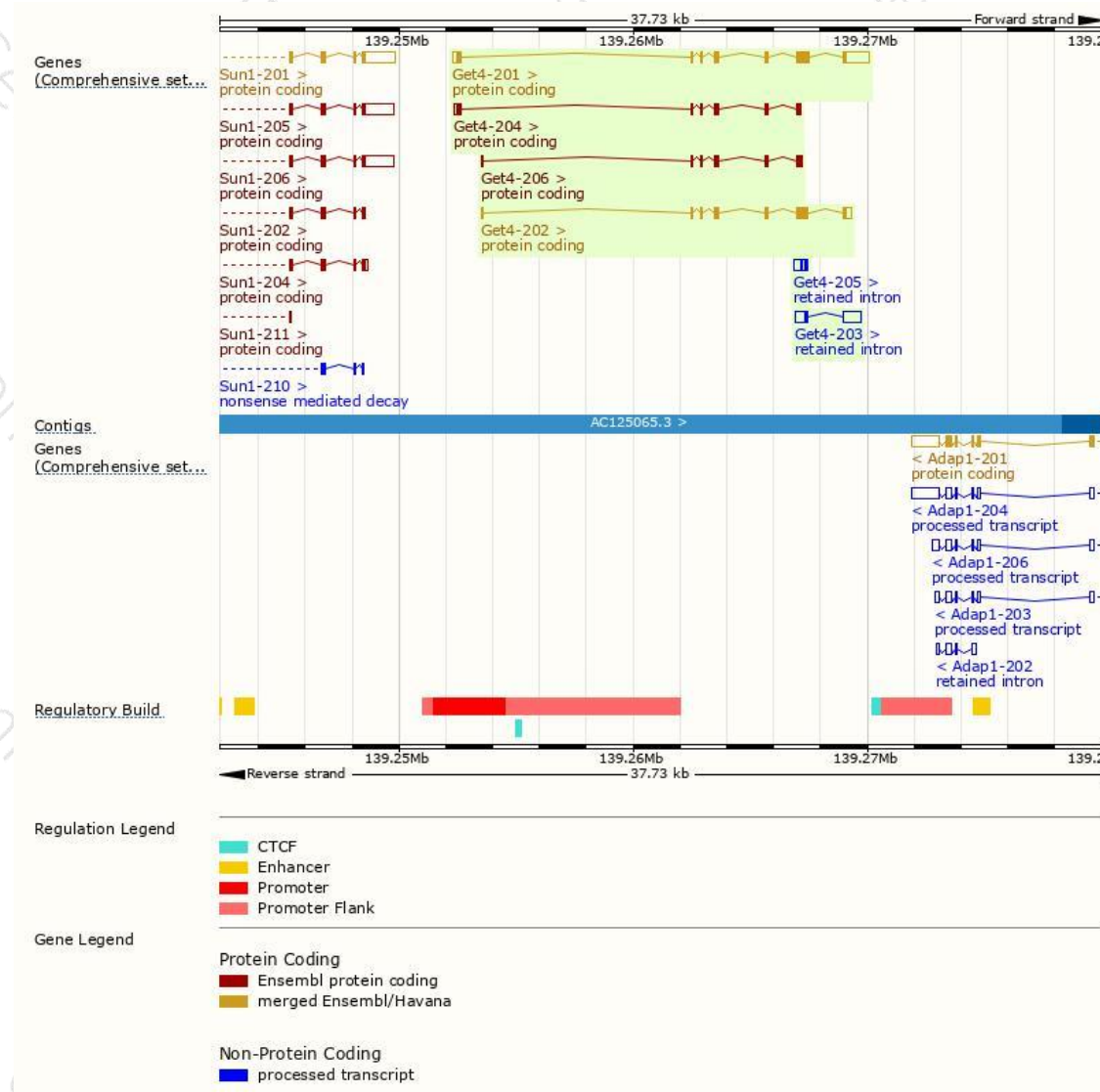
Protein domain

Mouse phenotype description(MGI)

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

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