

Vgll3 Cas9-CKO Strategy

Designer:

JiaYu

Reviewer:

Xiaojing Li

Design Date:

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Project Overview

Project Name

Vgll3

Project type

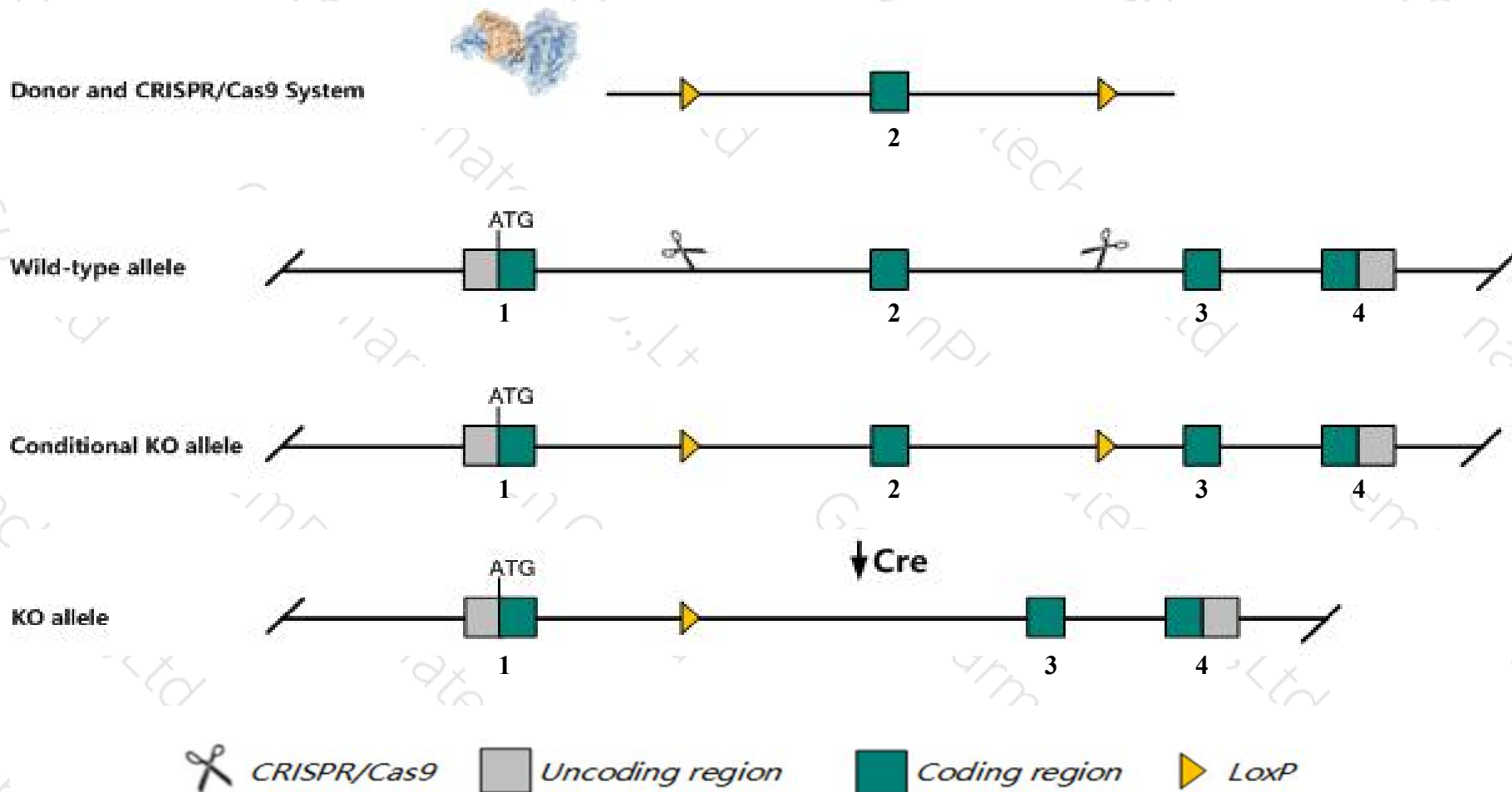
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vgll3* gene. The schematic diagram is as follows:



Technical routes

- The *Vgll3* gene has 3 transcripts. According to the structure of *Vgll3* gene, exon2 of *Vgll3-201* (ENSMUST00000168064.2) transcript is recommended as the knockout region. The region contains 283bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Vgll3* 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 *Vgll3* gene is located on the Chr16. 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)

Vgll3 vestigial like family member 3 [*Mus musculus* (house mouse)]

Gene ID: 73569, updated on 27-Aug-2019

Summary

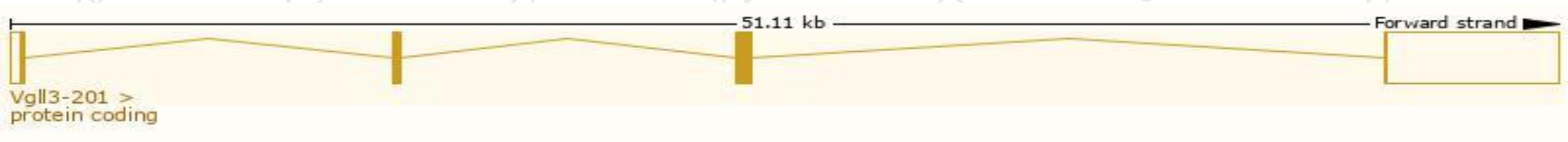
Official Symbol	Vgll3 provided by MGI
Official Full Name	vestigial like family member 3 provided by MGI
Primary source	MGI:MGI:1920819
See related	Ensembl:ENSMUSG000000091243
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Vgl-3; C80713; Vito-2; 4832416J22; 1700110N18Rik
Expression	Broad expression in bladder adult (RPKM 3.1), lung adult (RPKM 2.9) and 18 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

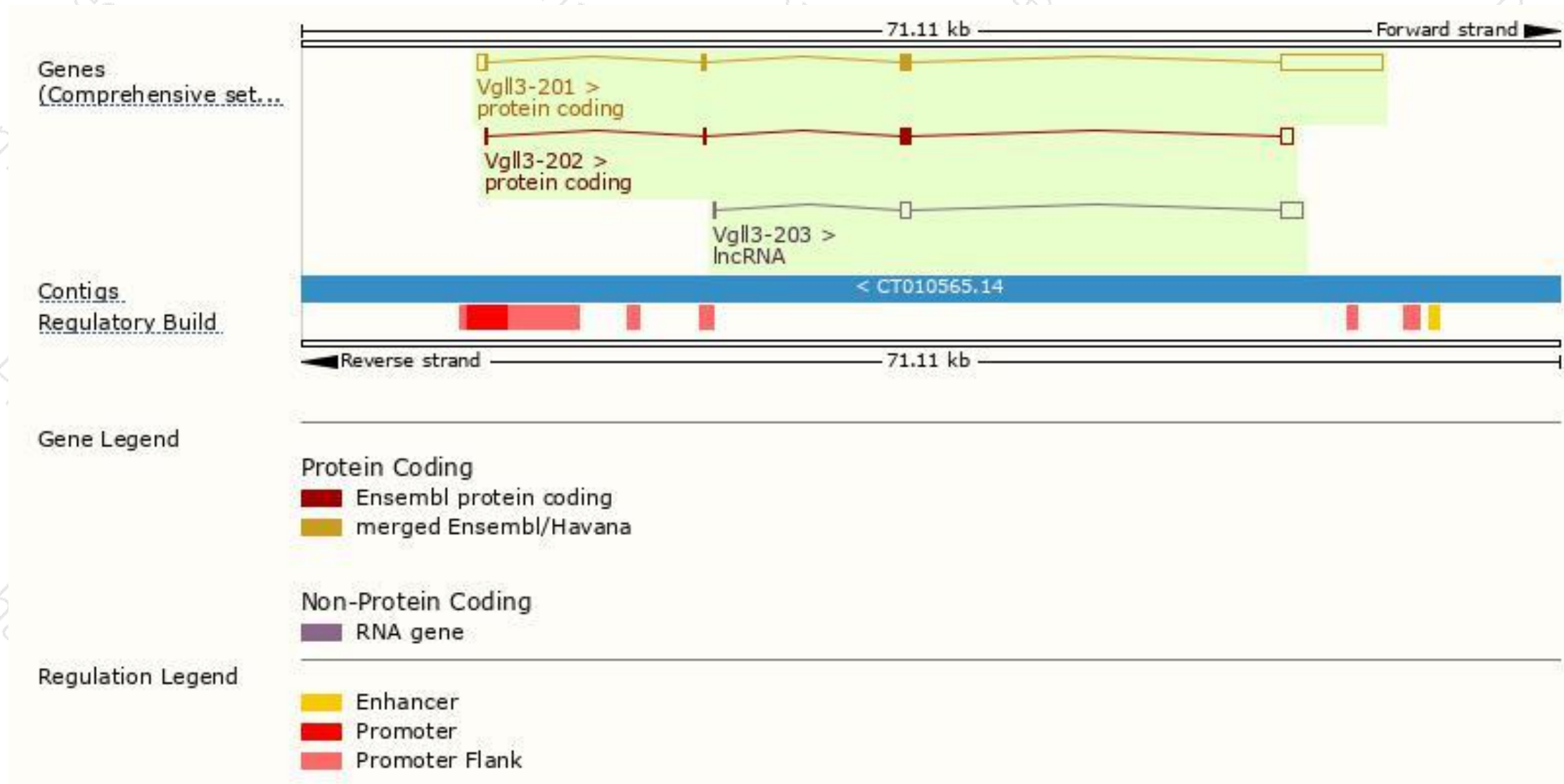
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Vgll3-201	ENSMUST00000168064.2	7009	325aa	Protein coding	CCDS49884	E9Q1Y1	TSL:1 GENCODE basic APPRIS P1
Vgll3-202	ENSMUST00000227997.1	1383	270aa	Protein coding	-	A0A2I3BPM3	GENCODE basic
Vgll3-203	ENSMUST00000228708.1	1846	No protein	lncRNA	-	-	

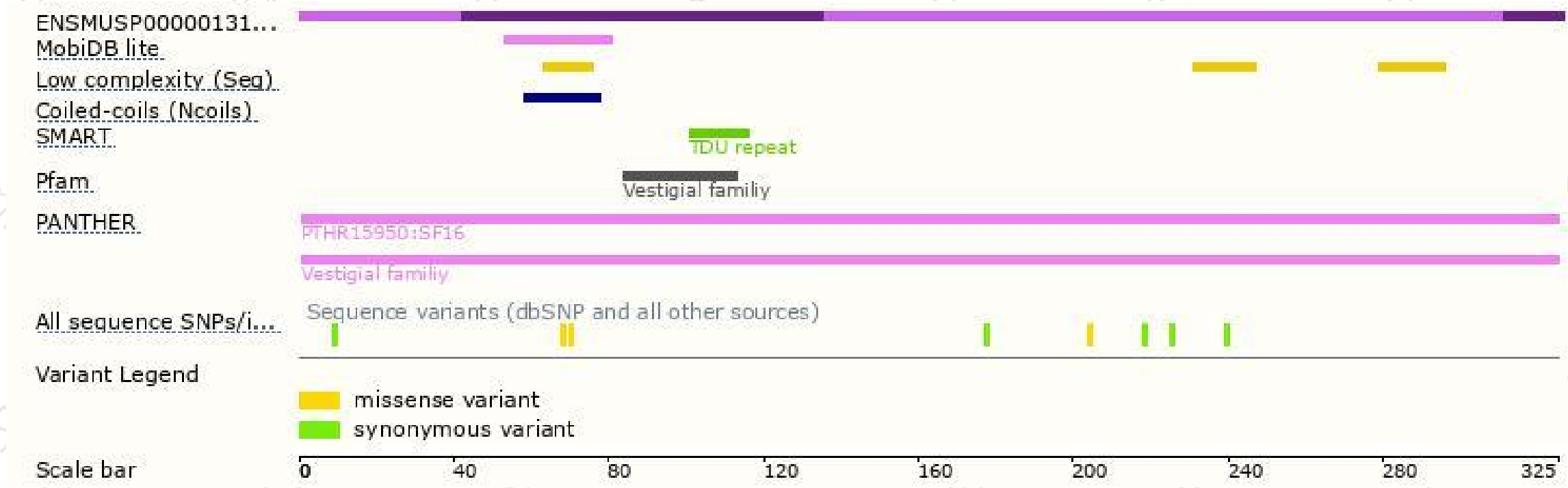
The strategy is based on the design of *Vgll3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

