Vgll1 Cas9-KO Strategy

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Reviewer: Xiaojing Li

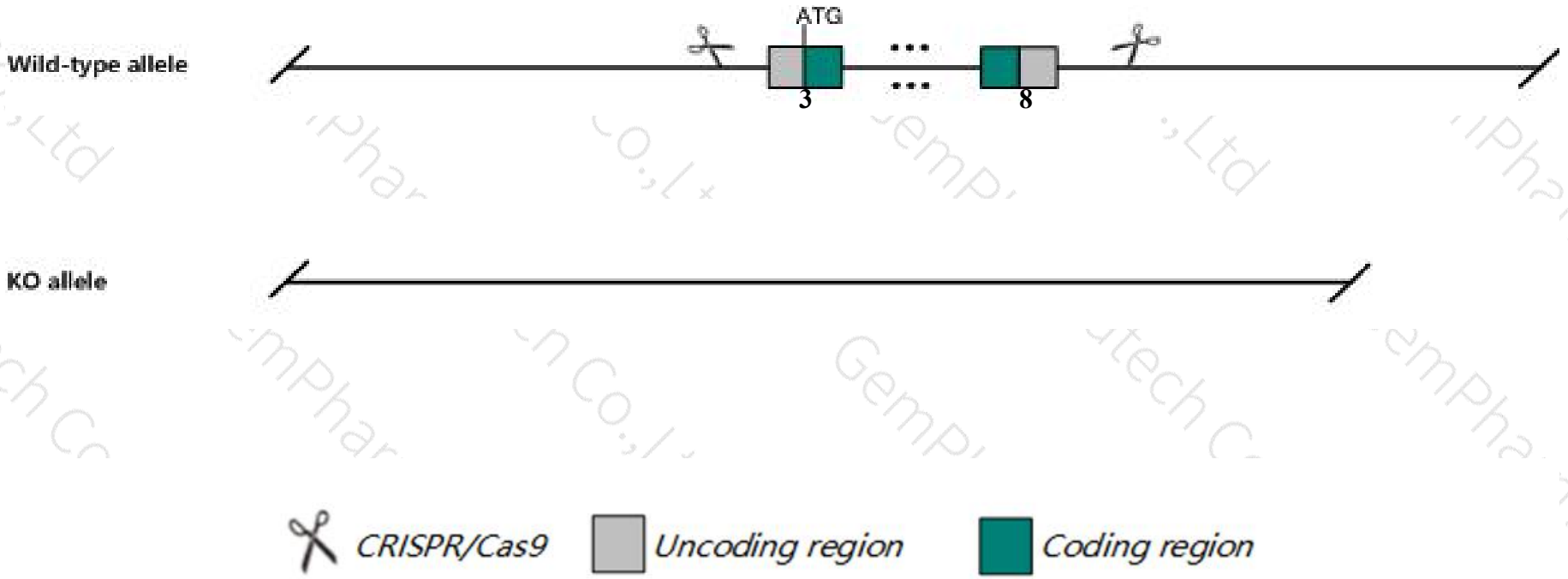
Design Date: 2019-8-30

Project Overview

Project Name	***Vgll1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vgll1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Vgll1* gene has 4 transcripts. According to the structure of *Vgll1* gene, exon3-exon8 of *Vgll1-201* (ENSMUST00000033465.9) transcript is recommended as the knockout region.The region contains all 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 *Vgll1* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Vgll1* gene is located on the ChrX. 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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Vgll1 vestigial like family member 1 [*Mus musculus* (house mouse)]

Gene ID: 170828, updated on 12-Aug-2019

Summary

Official Symbol	Vgll1 provided by MGI
Official Full Name	vestigial like family member 1 provided by MGI
Primary source	MGI:MGI:2655768
See related	Ensembl:ENSMUSG00000031131
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	Tondu
Expression	Biased expression in placenta adult (RPKM 2.1), bladder adult (RPKM 0.1) and 1 other tissue See more
Orthologs	human all

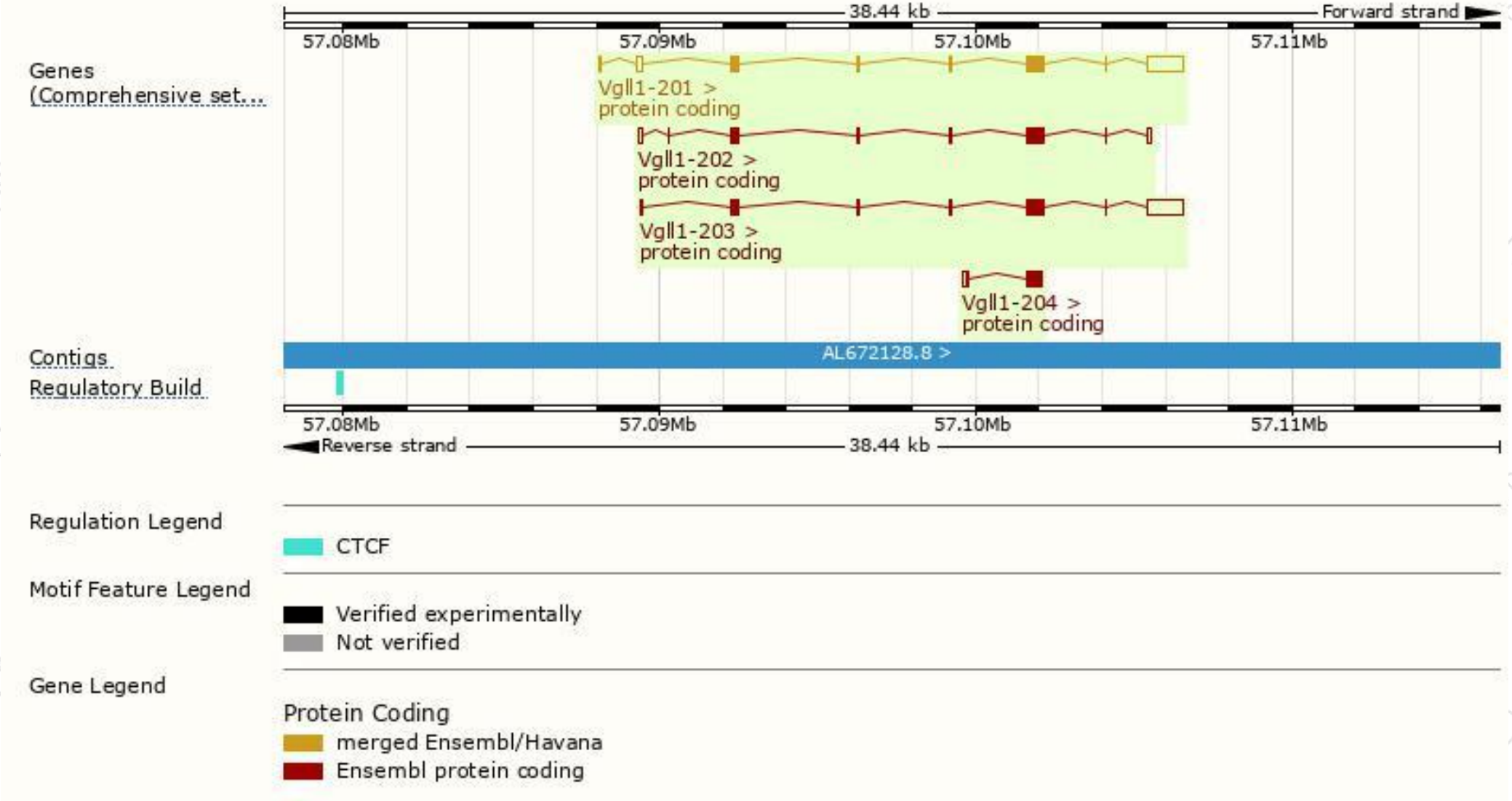
Transcript information（Ensembl）

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Vgll1-201	ENSMUST00000033465.9	2281	307aa	Protein coding	CCDS30151	Q99NC0	TSL:1 GENCODE basic APPRIS P1
Vgll1-203	ENSMUST00000114746.1	2151	307aa	Protein coding	CCDS30151	Q99NC0	TSL:1 GENCODE basic APPRIS P1
Vgll1-202	ENSMUST00000114745.8	1218	307aa	Protein coding	CCDS30151	Q99NC0	TSL:1 GENCODE basic APPRIS P1
Vgll1-204	ENSMUST00000141936.1	591	150aa	Protein coding	-	A2AFK0	CDS 3' incomplete TSL:2

The strategy is based on the design of *Vgll1-201* transcript,The transcription is shown below

Genomic location distribution



Protein domain

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

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