

Vwc2 Cas9-KO Strategy

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Project Overview

Project Name

Vwc2

Project type

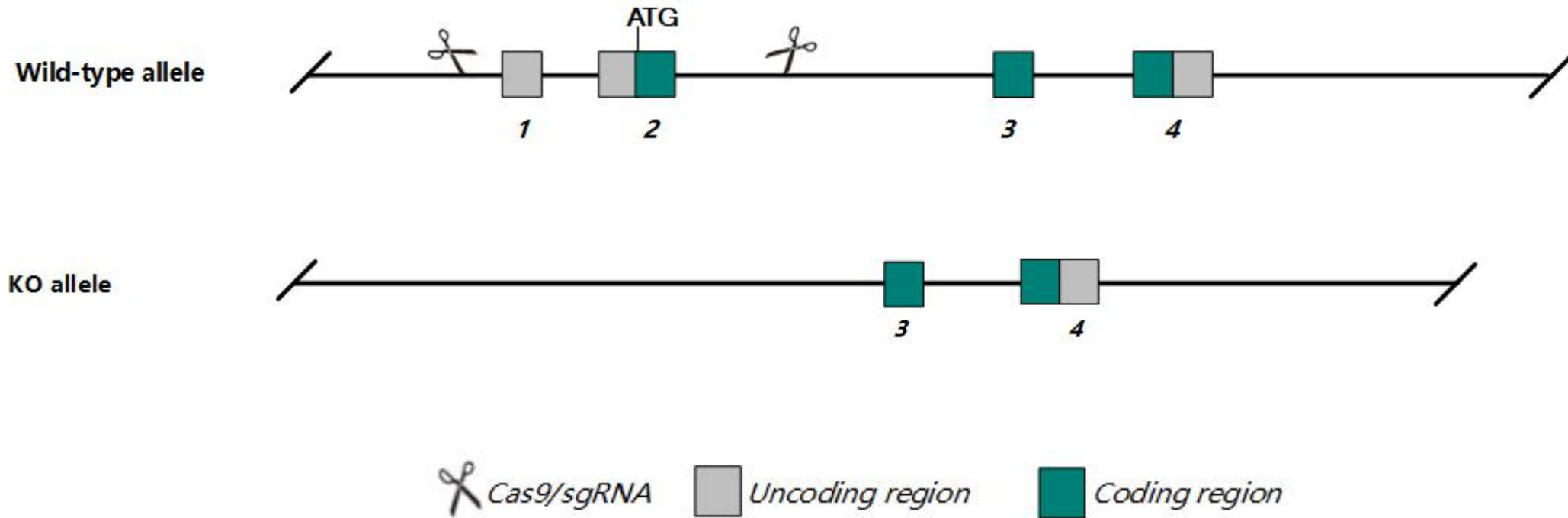
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vwc2* gene. The schematic diagram is as follows:



- The *Vwc2* gene has 4 transcripts. According to the structure of *Vwc2* gene, exon1-exon2 of *Vwc2-202* (ENSMUST00000109681.7) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Vwc2* gene. The brief process is as follows: gRNA was transcribed in vitro. Cas9 and gRNA 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 *Vwc2* gene is located on the Chr11. 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)

Vwc2 von Willebrand factor C domain containing 2 [Mus musculus (house mouse)]

Gene ID: 319922, updated on 13-Mar-2020

Summary



Official Symbol	Vwc2 provided by MGI
Official Full Name	von Willebrand factor C domain containing 2 provided by MGI
Primary source	MGI:MGI:2442987
See related	Ensembl:ENSMUSG00000050830
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	A930041G11Rik, G11, PSST739, UNQ739, cradin
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

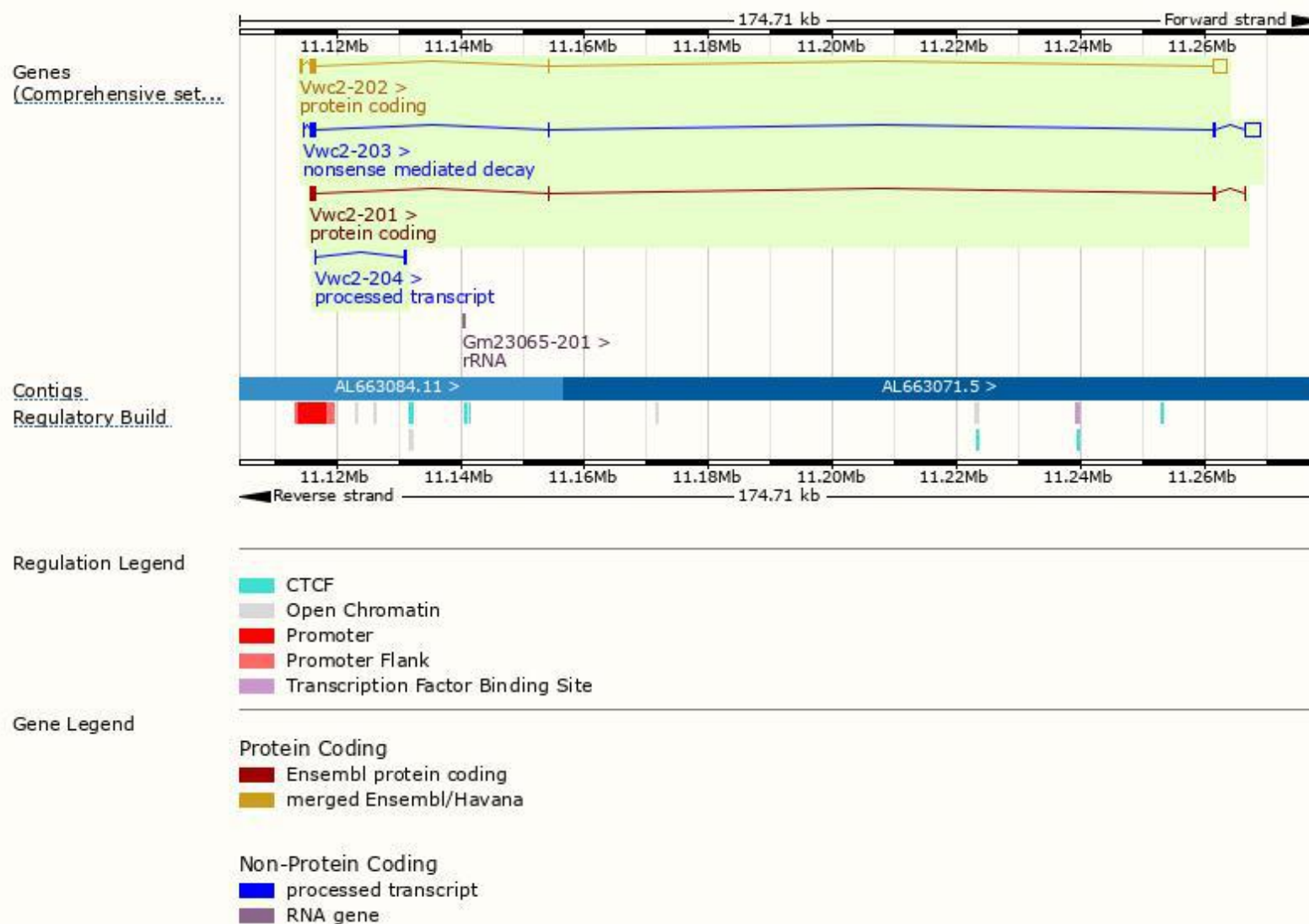
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Vwc2-202	ENSMUST00000109681.7	3371	324aa	Protein coding	CCDS36111	Q8C8N3	TSL:1 GENCODE basic APPRIS P1
Vwc2-201	ENSMUST00000056344.4	1350	324aa	Protein coding	CCDS36111	Q8C8N3	TSL:1 GENCODE basic APPRIS P1
Vwc2-203	ENSMUST00000129670.7	3712	324aa	Nonsense mediated decay	-	Q8C8N3	TSL:1
Vwc2-204	ENSMUST00000154155.1	397	No protein	Processed transcript	-	-	TSL:3

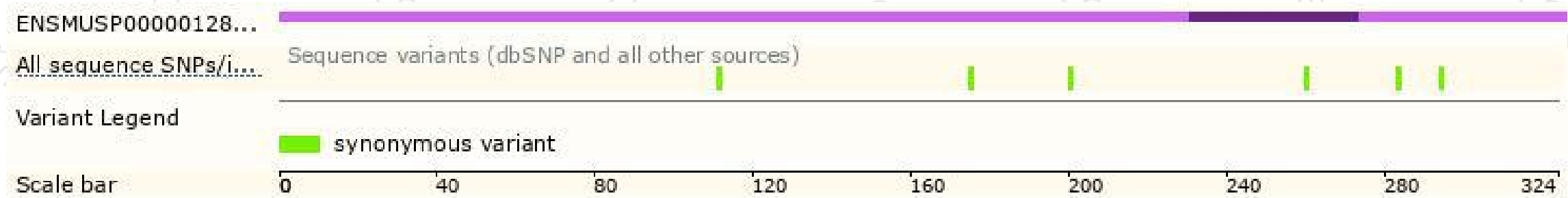
The strategy is based on the design of *Vwc2-202* transcript,the transcription is shown below



Genomic location distribution



Protein domain



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

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