

Vill Cas9-KO Strategy

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Project Overview

Project Name

Vill

Project type

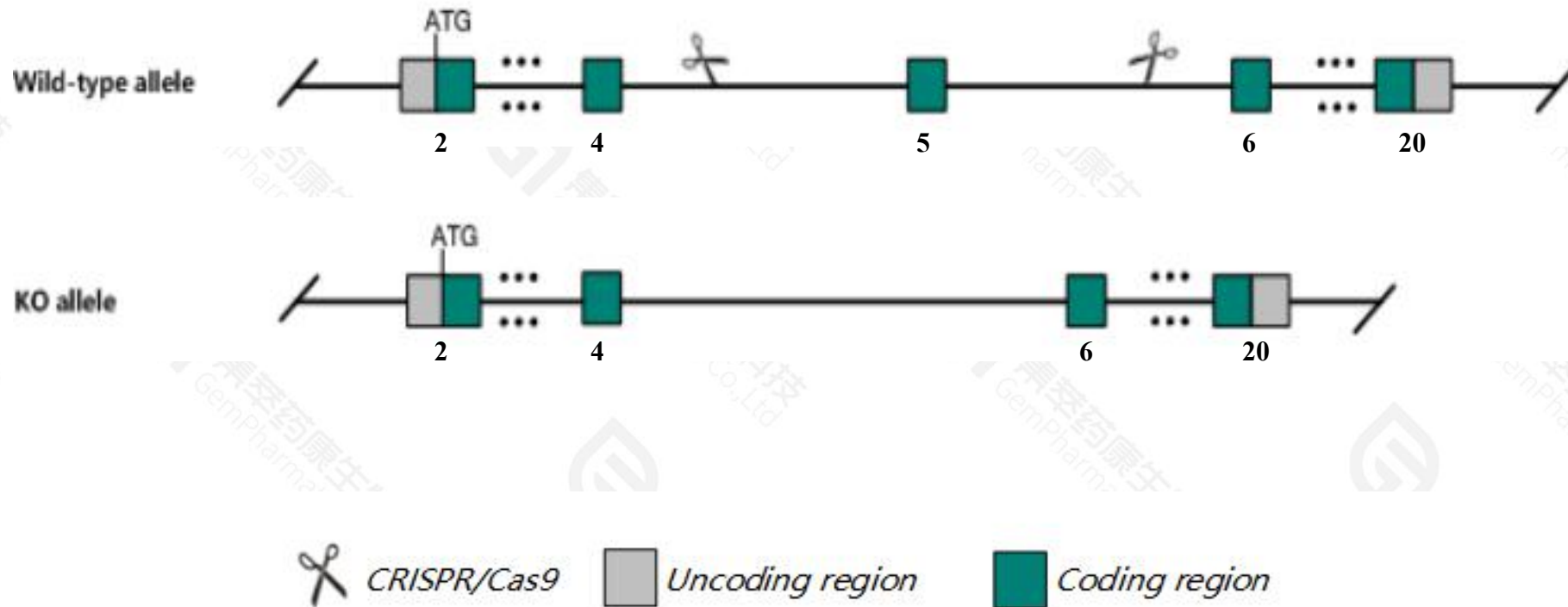
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Vill* gene has 10 transcripts. According to the structure of *Vill* gene, exon5 of *Vill-201*(ENSMUST00000051386.13) transcript is recommended as the knockout region. The region contains 109bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Vill* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Vill* gene is located on the Chr9. 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.
- Transcript *Vill* -203&204&206&207 may not be affected.
- 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.

Vill villin-like [Mus musculus (house mouse)]

Gene ID: 22351, updated on 17-Feb-2021

Summary



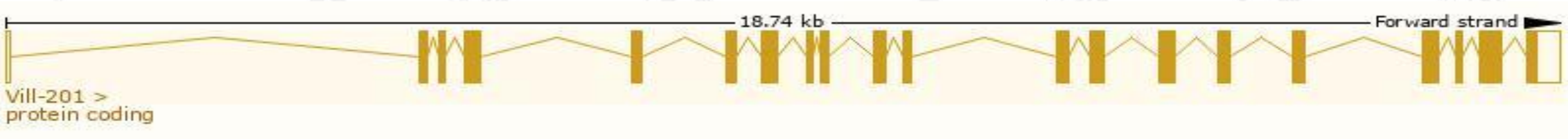
Official Symbol	Vill provided by MGI
Official Full Name	villin-like provided by MGI
Primary source	MGI:MGI:1201781
See related	Ensembl:ENSMUSG00000038775
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Villp
Expression	Broad expression in stomach adult (RPKM 30.1), kidney adult (RPKM 10.4) and 17 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

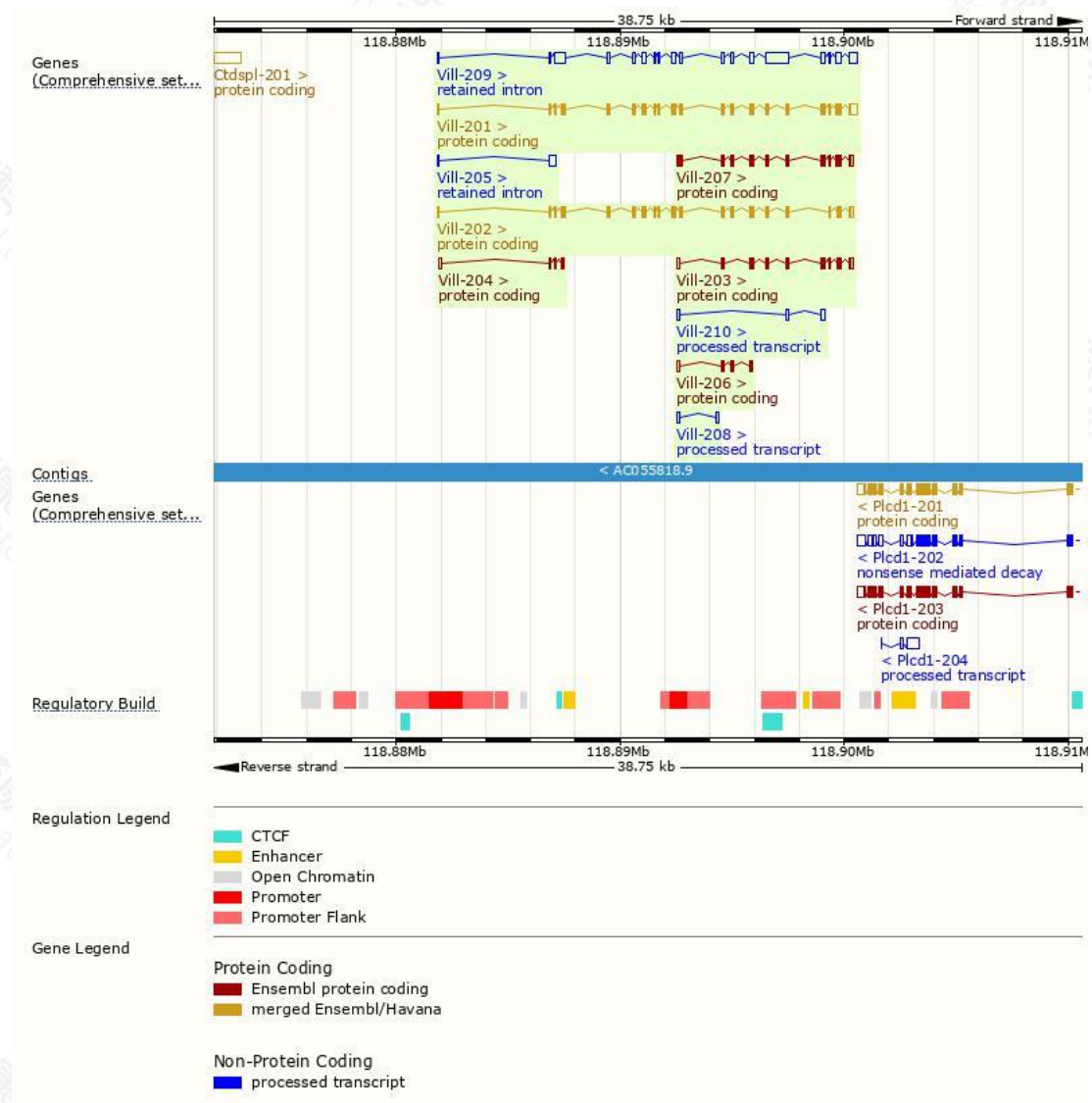
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Vill-201	ENSMUST00000051386.13	2909	859aa	Protein coding	CCDS52962		TSL:1 , GENCODE basic , APPRIS P1 ,
Vill-202	ENSMUST00000074734.13	2440	775aa	Protein coding	CCDS23606		TSL:1 , GENCODE basic ,
Vill-207	ENSMUST00000141185.8	1645	475aa	Protein coding	-		TSL:1 , GENCODE basic ,
Vill-203	ENSMUST00000126251.8	1411	392aa	Protein coding	-		TSL:1 , GENCODE basic ,
Vill-206	ENSMUST00000136561.2	558	140aa	Protein coding	-		CDS 3' incomplete , TSL:2 ,
Vill-204	ENSMUST00000131647.2	360	85aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Vill-210	ENSMUST00000153630.2	477	No protein	Processed transcript	-		TSL:3 ,
Vill-208	ENSMUST00000151638.2	227	No protein	Processed transcript	-		TSL:3 ,
Vill-209	ENSMUST00000153454.2	3901	No protein	Retained intron	-		TSL:2 ,
Vill-205	ENSMUST00000135872.8	324	No protein	Retained intron	-		TSL:3 ,

The strategy is based on the design of *Vill-201* 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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