

Virma Cas9-KO Strategy

Designer: Xueting Zhang

Project Overview

Project Name

Virma

Project type

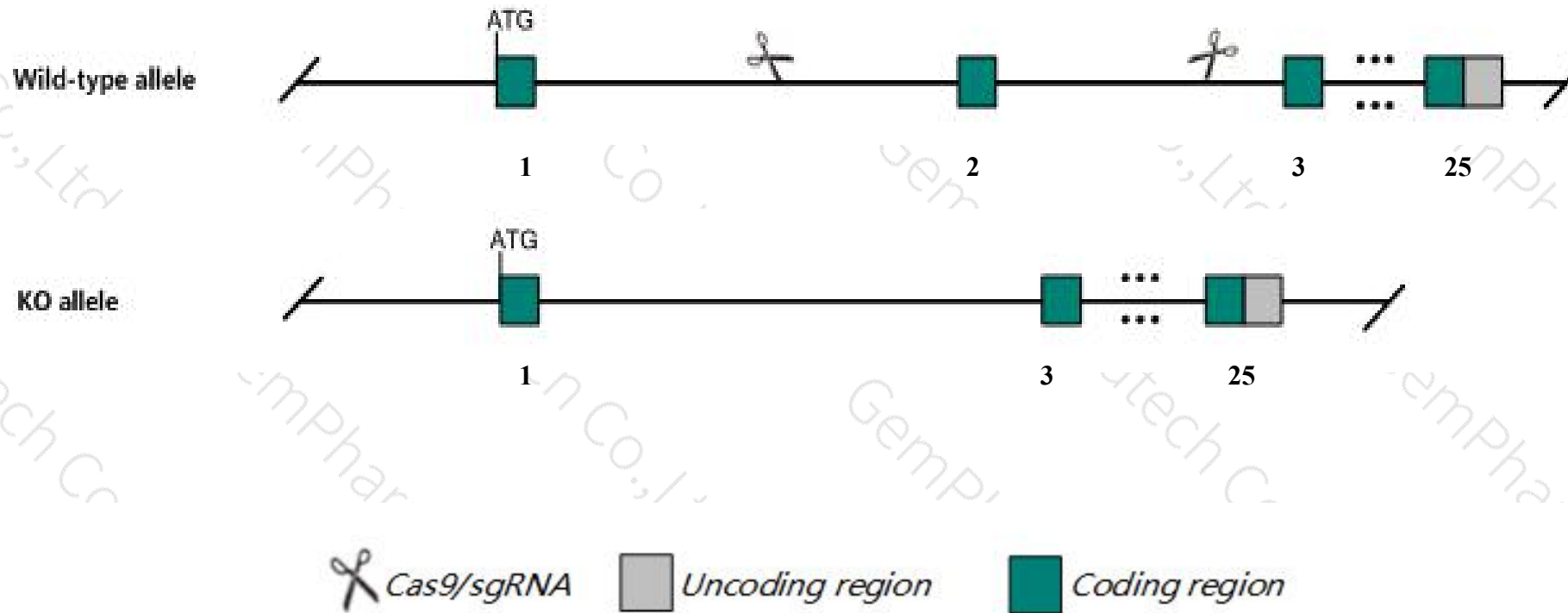
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

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



- The *Virma* gene has 3 transcripts. According to the structure of *Virma* gene, exon2 of *Virma-203* (ENSMUST00000108307.2) transcript is recommended as the knockout region. The region contains 116bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Virma* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- The *Virma* gene is located on the Chr4. 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information (NCBI)

Virma vir like m6A methyltransferase associated [Mus musculus (house mouse)]

Gene ID: 66185, updated on 31-Jan-2019

Summary



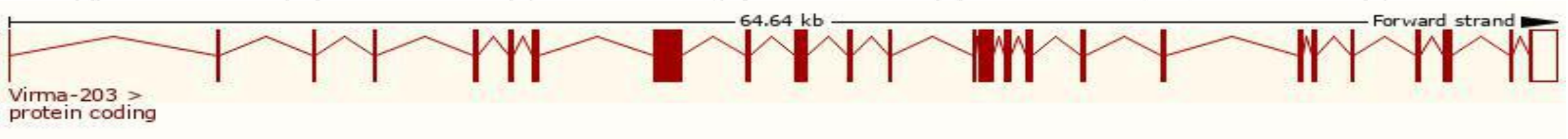
Official Symbol	Virma provided by MGI
Official Full Name	vir like m6A methyltransferase associated provided by MGI
Primary source	MGI:MGI:1913435
See related	Ensembl:ENSMUSG00000040720
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110037F02Rik, 4930422M05Rik, Kiaa1429, mKIAA1429
Expression	Ubiquitous expression in limb E14.5 (RPKM 9.4), CNS E11.5 (RPKM 9.3) and 28 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
Virma-203	ENSMUST00000108307.2	6571	1861aa	Protein coding	CCDS38693	E9PZY8	TSL:5 GENCODE basic
Virma-202	ENSMUST00000059914.12	6506	1811aa	Protein coding	CCDS84705	A2AIV2	TSL:1 GENCODE basic APPRIS P1
Virma-201	ENSMUST00000055372.13	3954	1139aa	Protein coding	-	A2AIV2	TSL:1 GENCODE basic

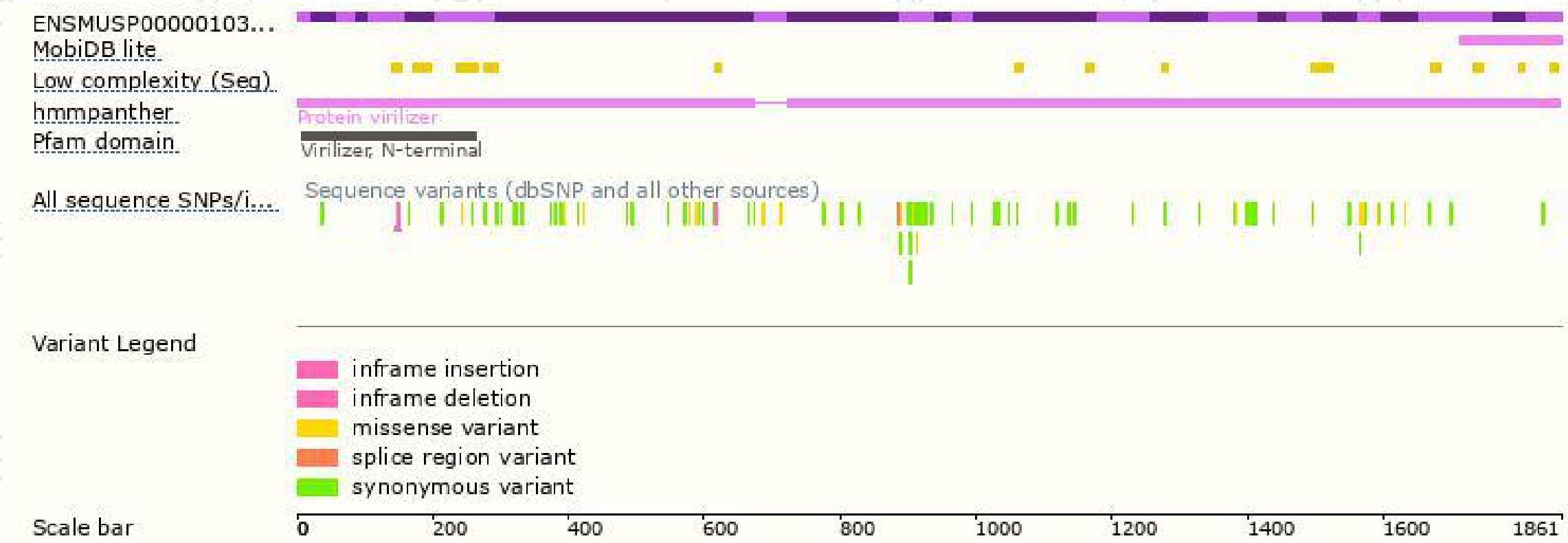
The strategy is based on the design of *Virma-203* transcript,The transcription is shown below



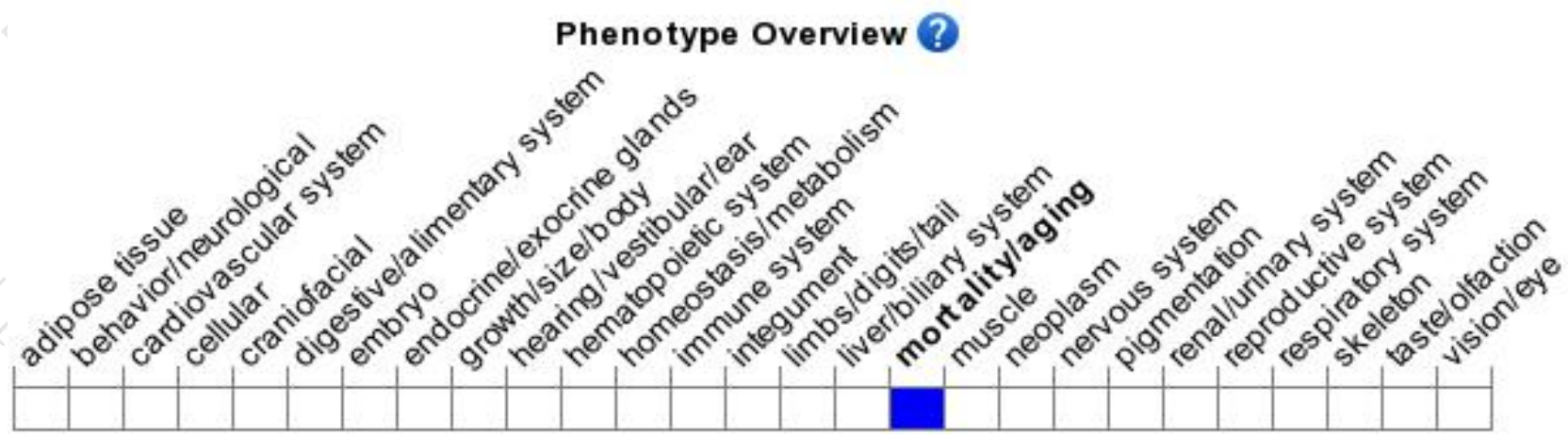
Genomic location distribution



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.

Tel: 025-5864 1534

