

***Morc4* Cas9-KO Strategy**

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Design Date: 2020-9-1

Project Overview

Project Name

Morc4

Project type

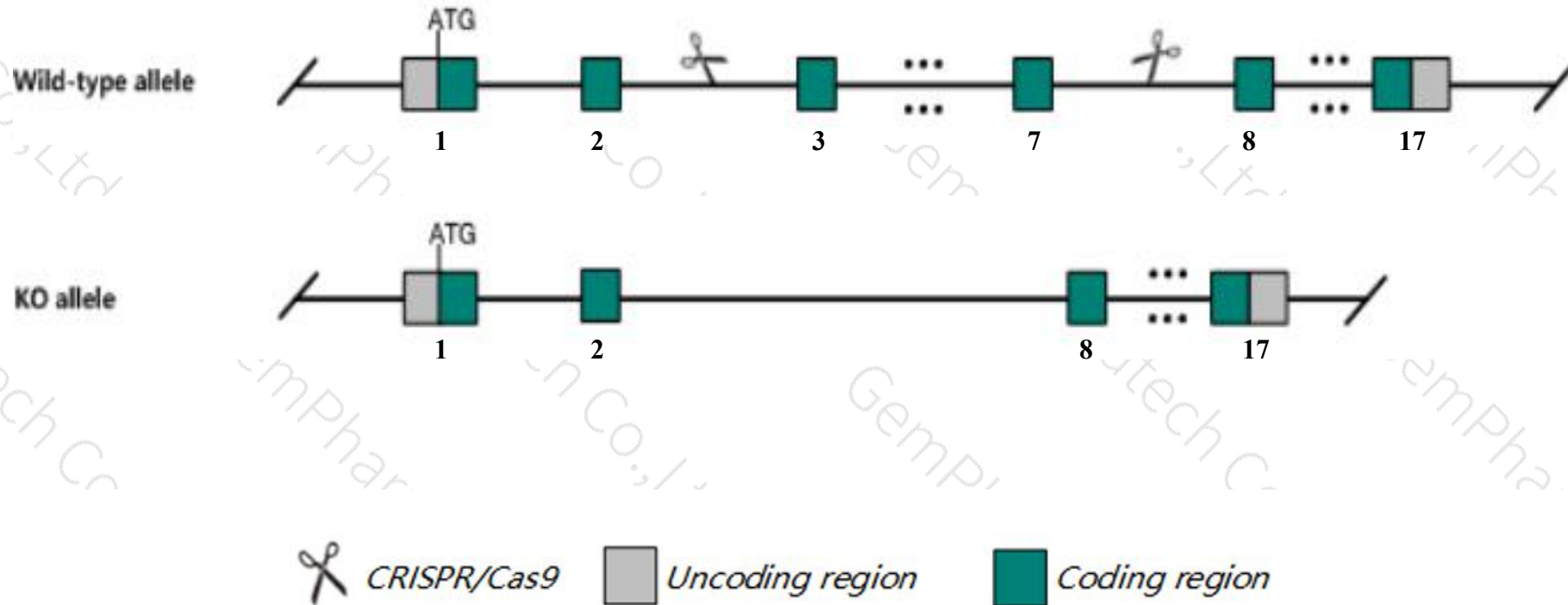
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Morc4* gene. The schematic diagram is as follows:



- The *Morc4* gene has 10 transcripts. According to the structure of *Morc4* gene, exon3-exon7 of *Morc4*-202(ENSMUST00000087401.11) transcript is recommended as the knockout region. The region contains 761bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Morc4* 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 *Morc4* 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)

Morc4 microrchidia 4 [Mus musculus (house mouse)]

Gene ID: 75746, updated on 13-Mar-2020

Summary



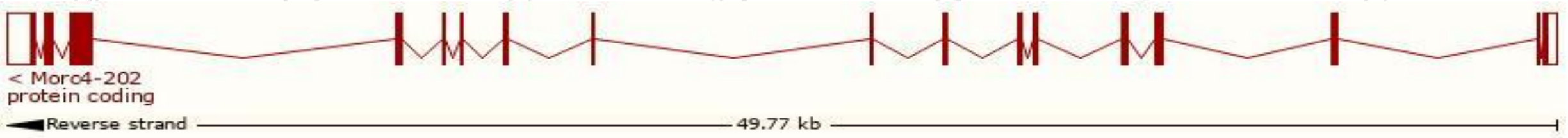
Official Symbol	Morc4 provided by MGI
Official Full Name	microrchidia 4 provided by MGI
Primary source	MGI:MGI:1922996
See related	Ensembl:ENSMUSG00000031434
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1600017G11Rik, 5630401M14Rik, AA117449, Zcwcc2
Expression	Biased expression in placenta adult (RPKM 39.1), liver E18 (RPKM 16.0) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

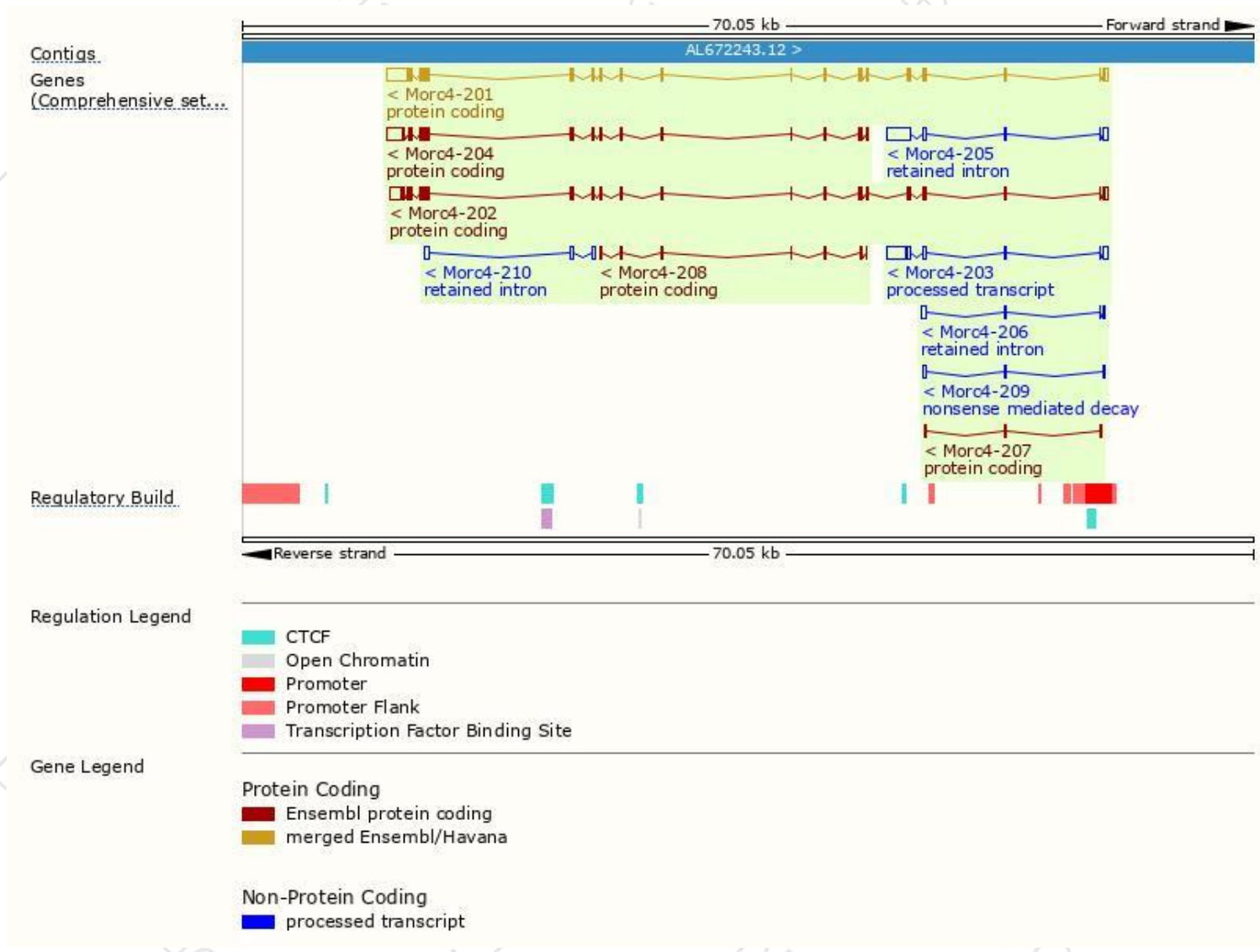
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Morc4-201	ENSMUST00000033811.13	4412	883aa	Protein coding	CCDS53203	Q8BMD7	TSL:1 GENCODE basic APPRIS P3
Morc4-202	ENSMUST00000087401.11	3862	928aa	Protein coding	CCDS57777	Q8BMD7	TSL:1 GENCODE basic APPRIS ALT2
Morc4-204	ENSMUST00000136415.8	3046	667aa	Protein coding	-	F6WD71	CDS 5' incomplete TSL:5
Morc4-208	ENSMUST00000167664.1	655	218aa	Protein coding	-	F6WL51	CDS 5' and 3' incomplete TSL:5
Morc4-207	ENSMUST00000165274.1	370	104aa	Protein coding	-	E9Q112	CDS 3' incomplete TSL:3
Morc4-209	ENSMUST00000171896.1	456	37aa	Nonsense mediated decay	-	E9PW50	TSL:5
Morc4-203	ENSMUST00000113014.7	2195	No protein	Processed transcript	-	-	TSL:2
Morc4-205	ENSMUST00000144481.7	2326	No protein	Retained intron	-	-	TSL:2
Morc4-210	ENSMUST00000172366.1	755	No protein	Retained intron	-	-	TSL:2
Morc4-206	ENSMUST00000146914.2	600	No protein	Retained intron	-	-	TSL:1

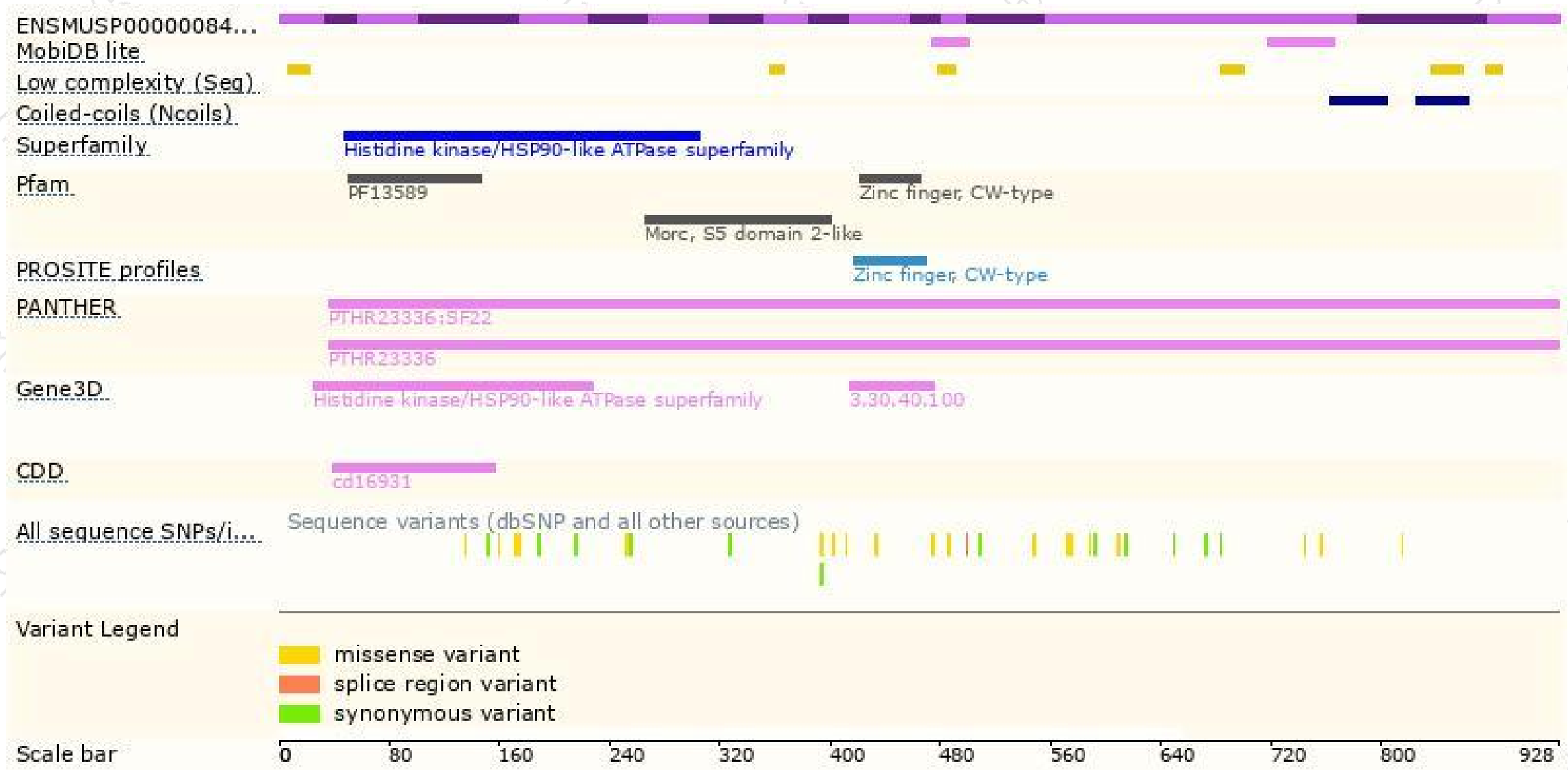
The strategy is based on the design of *Morc4-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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