

***Emc2* Cas9-KO Strategy**

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Project Overview

Project Name

Emc2

Project type

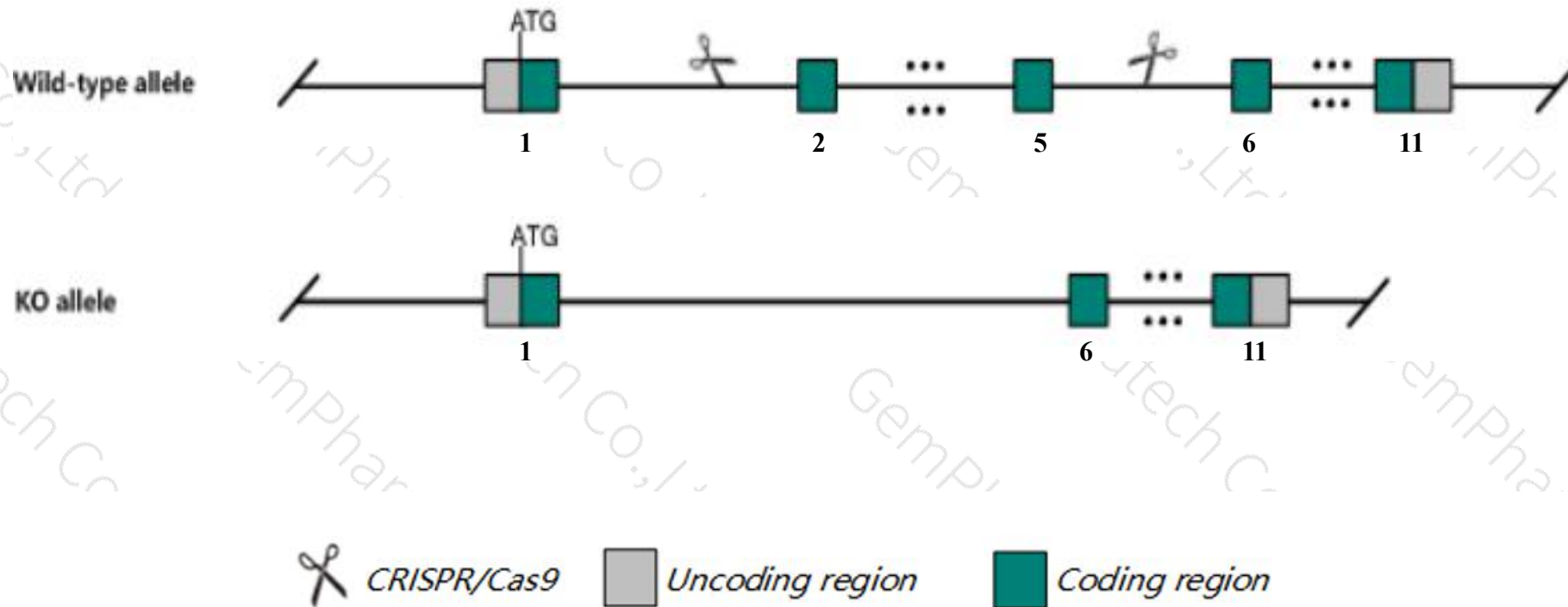
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Emc2* gene. The schematic diagram is as follows:



- The *Emc2* gene has 3 transcripts. According to the structure of *Emc2* gene, exon2-exon5 of *Emc2-201* (ENSMUST00000022962.7) transcript is recommended as the knockout region. The region contains 323bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Emc2* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Emc2* gene is located on the Chr15. 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)

Emc2 ER membrane protein complex subunit 2 [Mus musculus (house mouse)]

Gene ID: 66736, updated on 13-Mar-2020

Summary



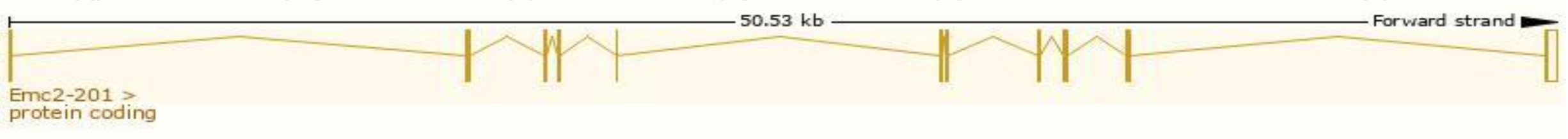
Official Symbol	Emc2 provided by MGI
Official Full Name	ER membrane protein complex subunit 2 provided by MGI
Primary source	MGI:MGI:1913986
See related	Ensembl:ENSMUSG00000022337
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4921531G14Rik, AV060620, AW209495, Ttc35
Expression	Broad expression in bladder adult (RPKM 27.1), cerebellum adult (RPKM 21.2) and 21 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

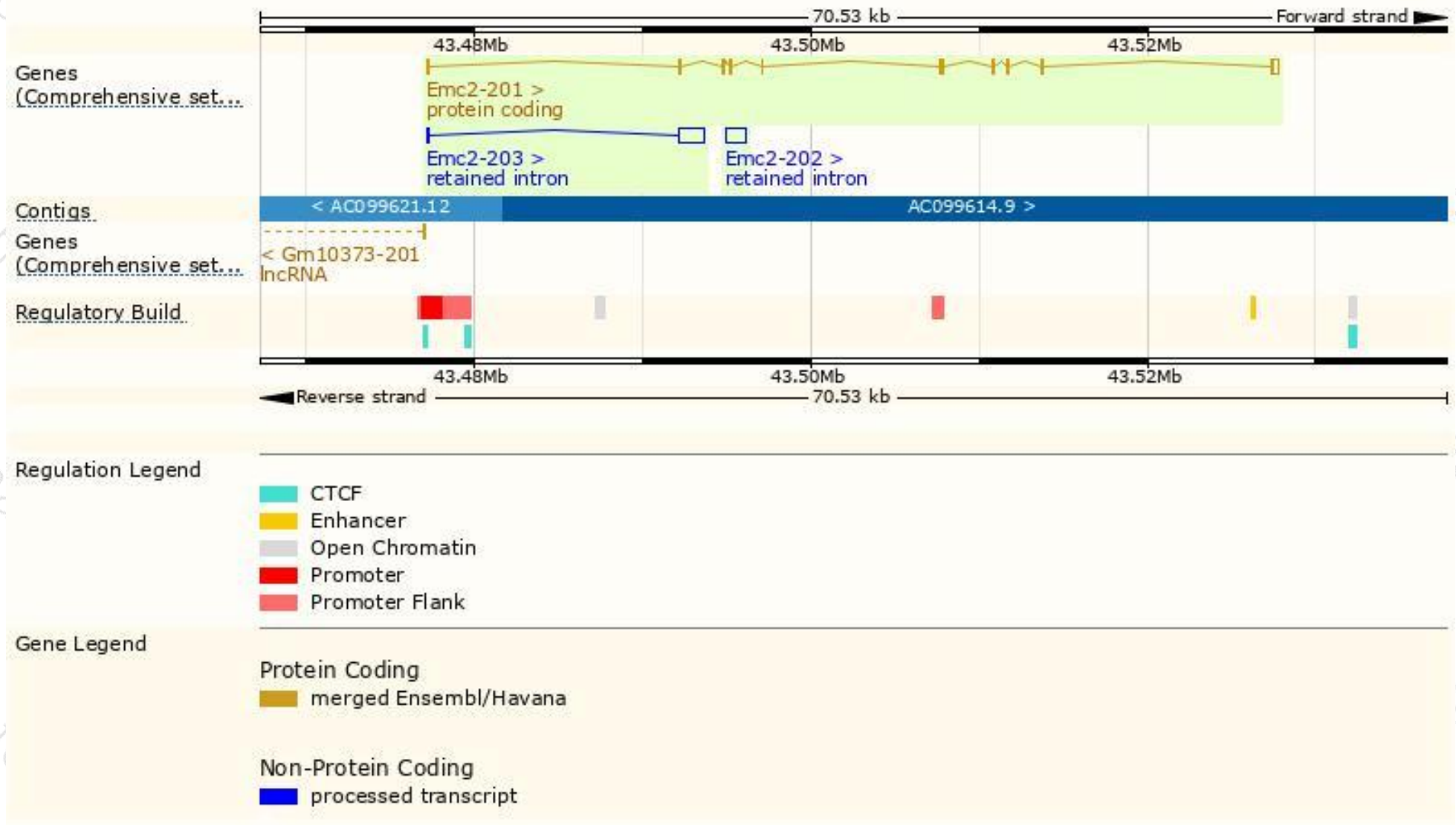
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Emc2-201	ENSMUST00000022962.7	1231	297aa	Protein coding	CCDS27453	Q6A0D1 Q9CRD2	TSL:1 GENCODE basic APPRIS P1
Emc2-203	ENSMUST00000228864.1	1548	No protein	Retained intron	-	-	
Emc2-202	ENSMUST00000227055.1	1272	No protein	Retained intron	-	-	

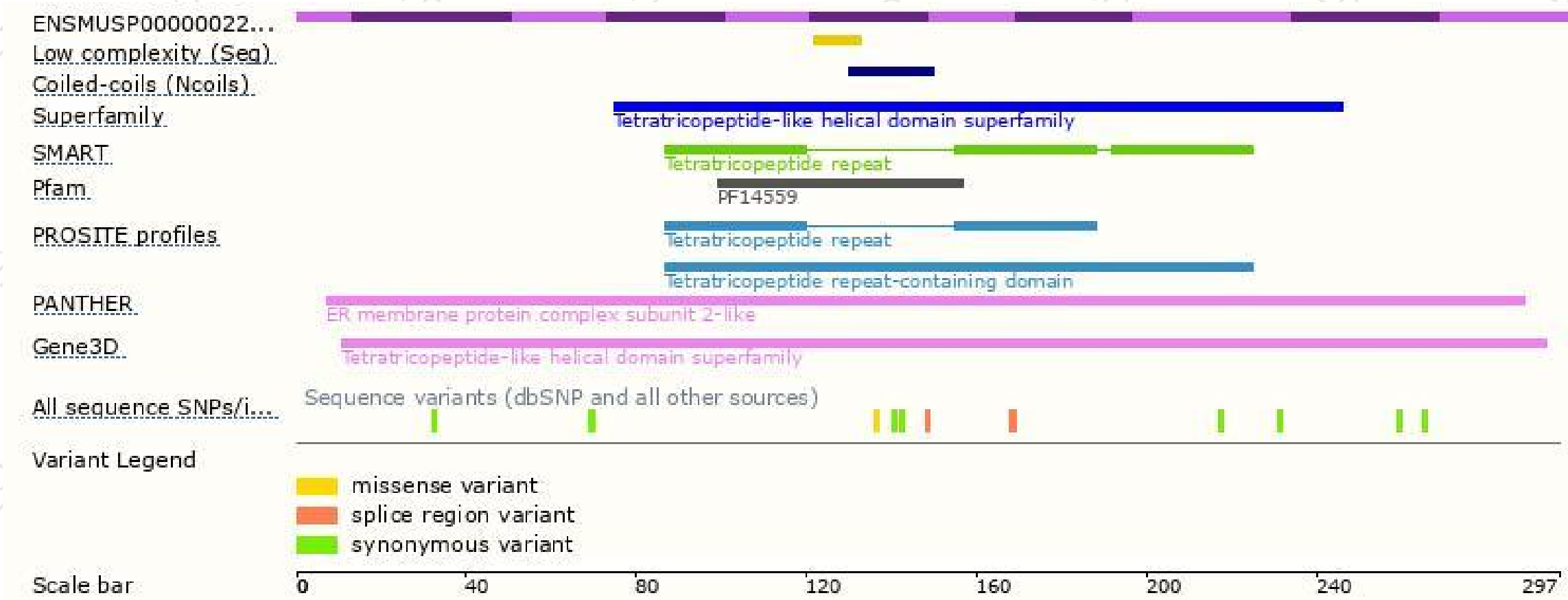
The strategy is based on the design of *Emc2-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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