

Fbxo16 Cas9-KO Strategy

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Project Overview

Project Name

Fbxo16

Project type

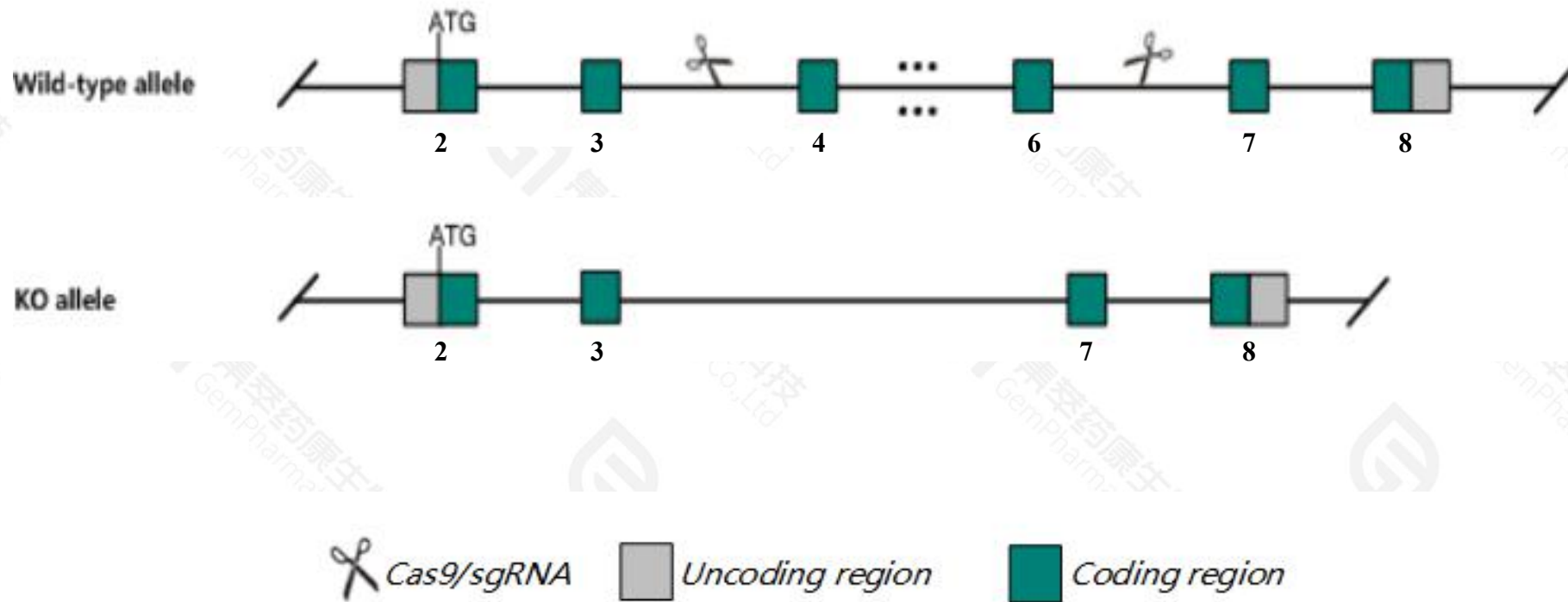
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fbxo16* gene. The schematic diagram is as follows:



- The *Fbxo16* gene has 4 transcripts. According to the structure of *Fbxo16* gene, exon4-exon6 of *Fbxo16*-203(ENSMUST00000224629.2) transcript is recommended as the knockout region. The region contains 602bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fbxo16* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Fbxo16* gene is located on the Chr14. 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)

Fbxo16 F-box protein 16 [Mus musculus (house mouse)]

Gene ID: 50759, updated on 25-Sep-2020

Summary



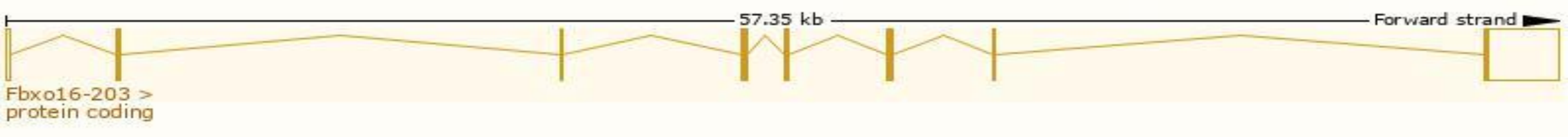
Official Symbol	Fbxo16 provided by MGI
Official Full Name	F-box protein 16 provided by MGI
Primary source	MGI:MGI:1354706
See related	Ensembl:ENSMUSG00000034532
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4932435C24Rik, Fbx16
Expression	Broad expression in CNS E14 (RPKM 1.8), whole brain E14.5 (RPKM 1.7) and 15 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

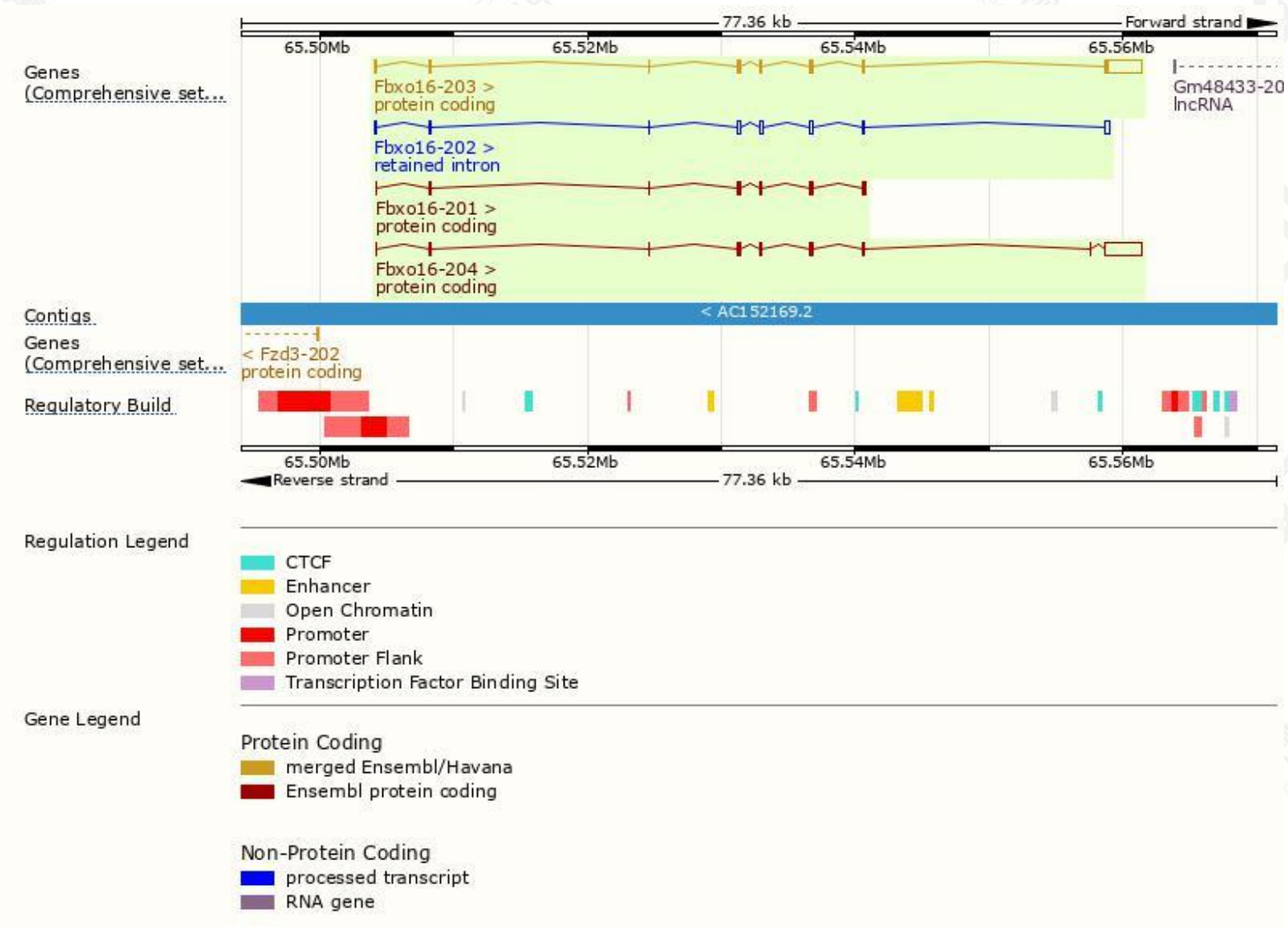
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fbxo16-203	ENSMUST00000224629.2	3781	334aa	Protein coding	CCDS36956		GENCODE basic , APPRIS P2 ,
Fbxo16-204	ENSMUST00000226005.2	3700	289aa	Protein coding	-		GENCODE basic , APPRIS ALT2 ,
Fbxo16-201	ENSMUST00000169656.3	1019	308aa	Protein coding	-		TSL:1 , GENCODE basic , APPRIS ALT2 ,
Fbxo16-202	ENSMUST00000223608.2	1335	No protein	Retained intron	-		

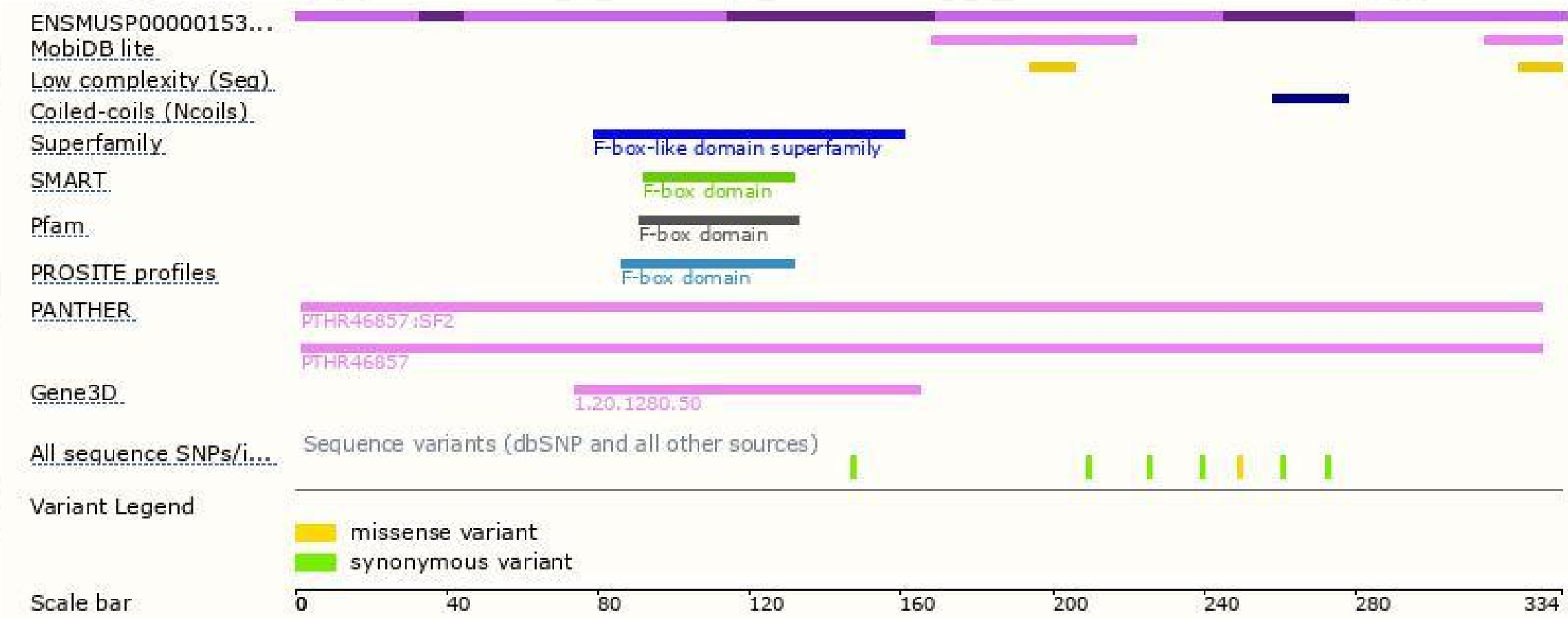
The strategy is based on the design of *Fbxo16-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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