

Pqbp1 Cas9-KO Strategy

Designer:

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Project Overview

Project Name

Pqbp1

Project type

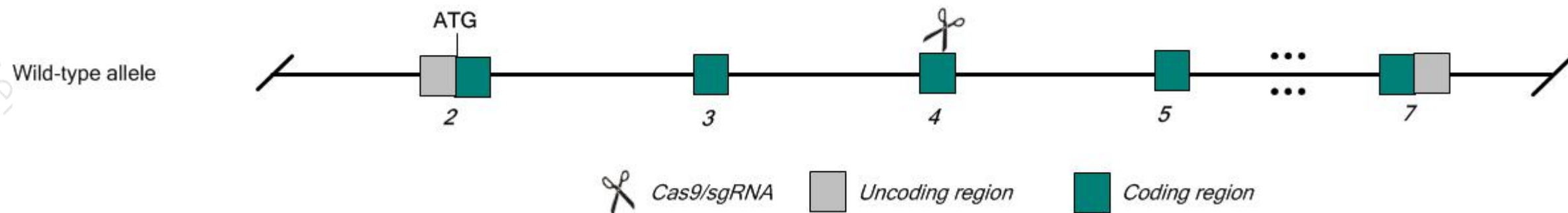
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pqbp1* gene. The schematic diagram is as follows:



Technical routes

- The *Pqbp1* gene has 5 transcripts. According to the structure of *Pqbp1* gene, partial exon4 of *Pqbp1*-203 (ENSMUST00000115655.7) transcript is recommended as the knockout region. The region contains key coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pqbp1* 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 *Pqbp1* 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)

Pqbp1 polyglutamine binding protein 1 [*Mus musculus* (house mouse)]

Gene ID: 54633, updated on 31-Jan-2019

Summary

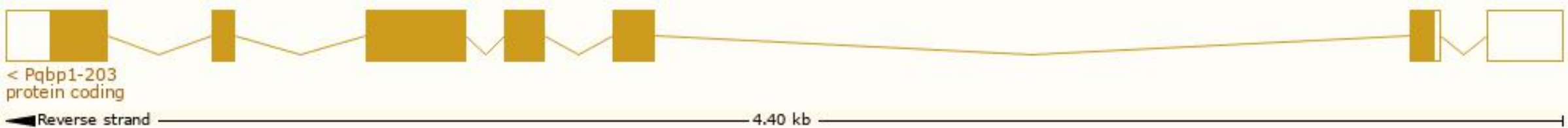
Official Symbol	Pqbp1 provided by MGI
Official Full Name	polyglutamine binding protein 1 provided by MGI
Primary source	MGI:MGI:1859638
See related	Ensembl:ENSMUSG000000031157
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Sfc2; npw38; PQBP-1
Expression	Ubiquitous expression in CNS E14 (RPKM 52.5), CNS E11.5 (RPKM 48.3) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

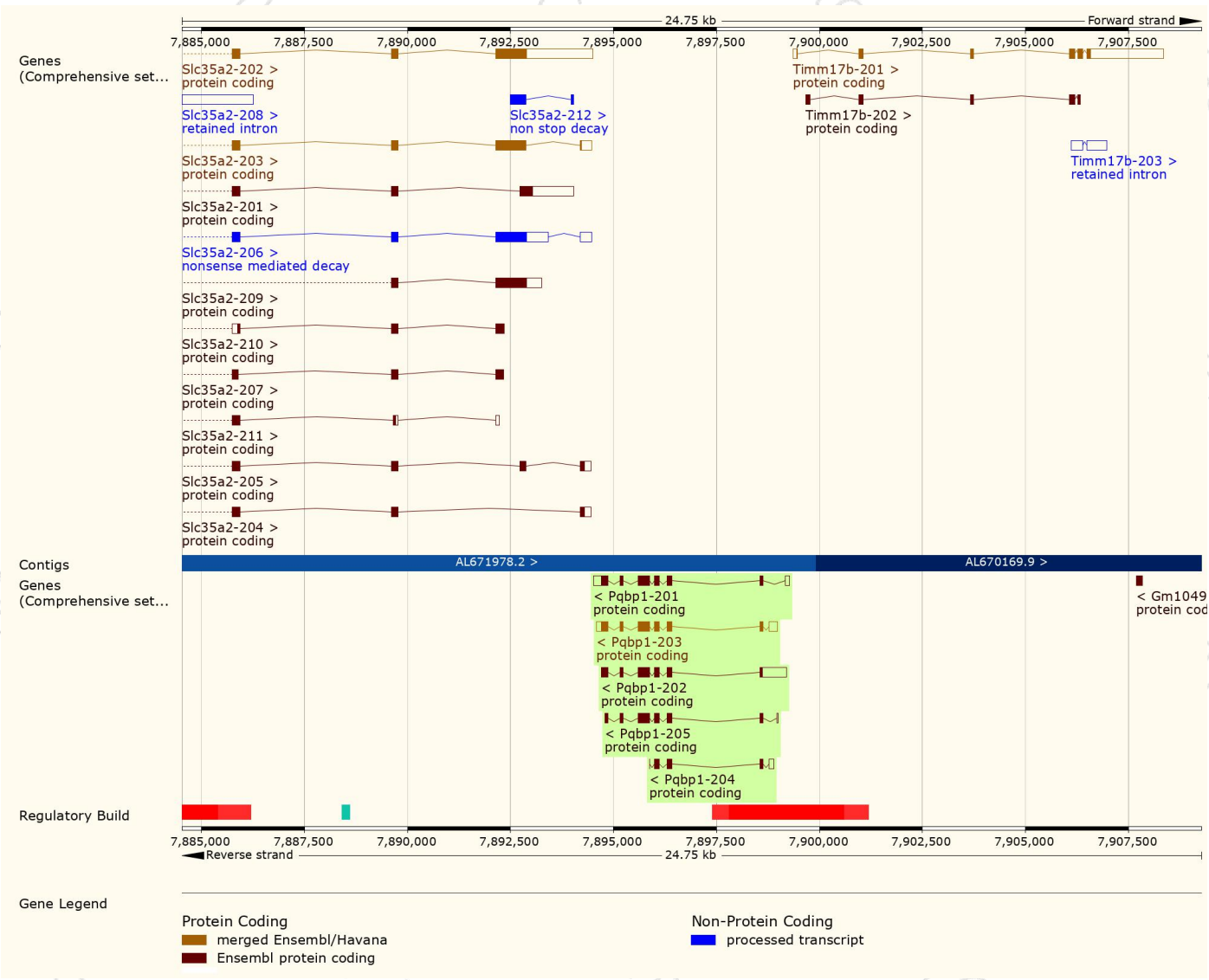
The gene has 5 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pqbp1-202	ENSMUST00000115654.7	1374	263aa	Protein coding	CCDS29977	A2AER7 Q91VJ5	TSL:1 GENCODE basic APPRIS P1
Pqbp1-203	ENSMUST00000115655.7	1148	263aa	Protein coding	CCDS29977	A2AER7 Q91VJ5	TSL:1 GENCODE basic APPRIS P1
Pqbp1-201	ENSMUST00000033497.8	1104	263aa	Protein coding	CCDS29977	A2AER7 Q91VJ5	TSL:1 GENCODE basic APPRIS P1
Pqbp1-205	ENSMUST00000156741.7	763	236aa	Protein coding	-	A2AER8	CDS 3' incomplete TSL:5
Pqbp1-204	ENSMUST00000154552.1	436	100aa	Protein coding	-	A2AER9	CDS 3' incomplete TSL:3

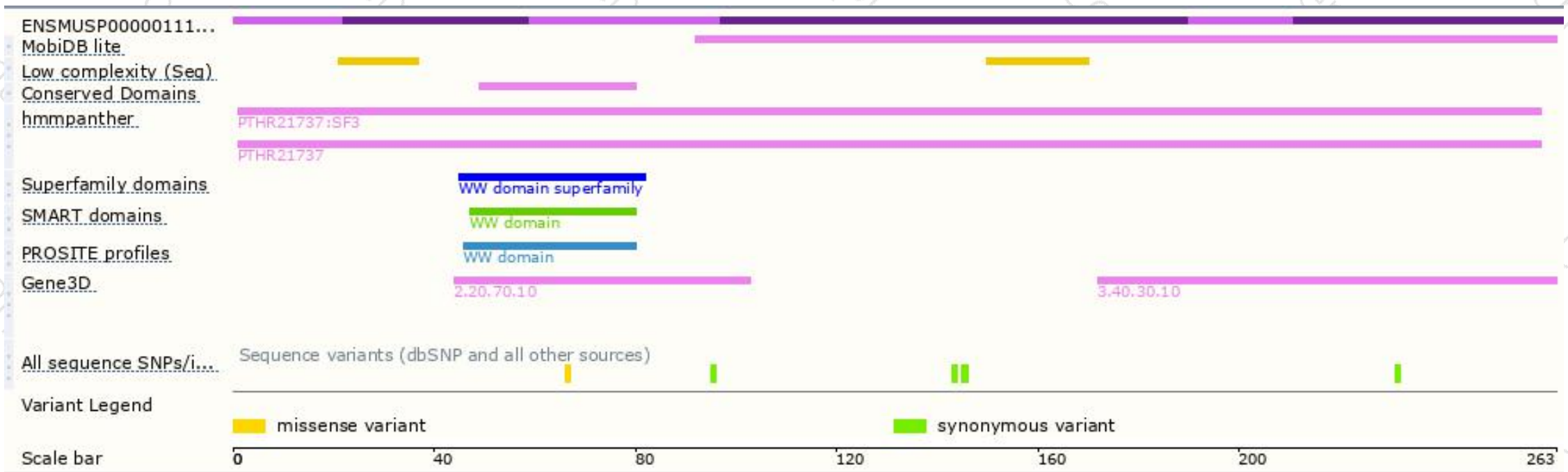
The strategy is based on the design of *Pqbp1-203* transcript, The transcription is shown below



Genomic location (Ensembl)



Protein domain (Ensembl)



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

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