

Fbxo36 Cas9-CKO Strategy

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Project Overview

Project Name

Fbxo36

Project type

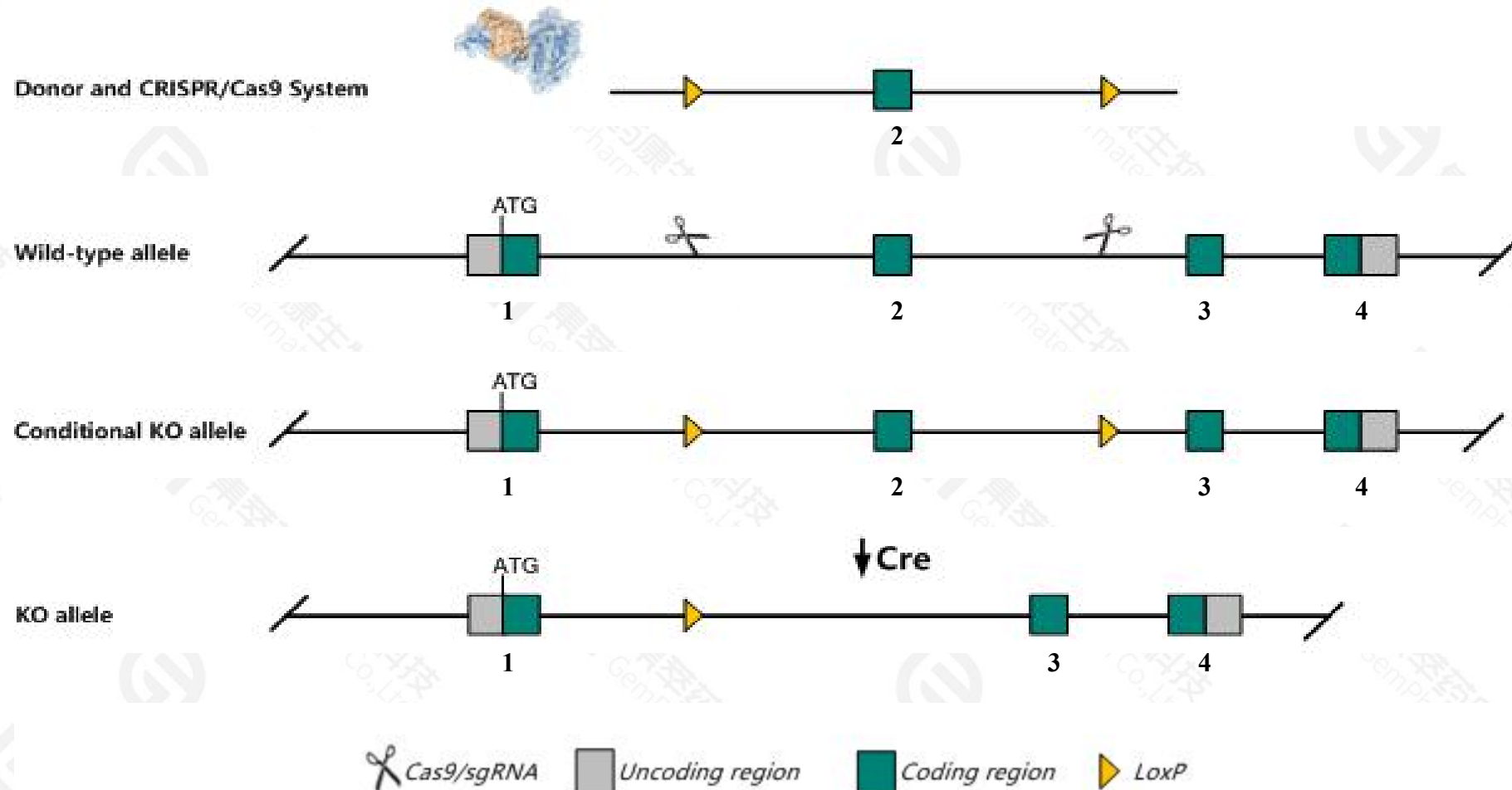
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fbxo36* gene. The schematic diagram is as follows:



Technical routes

- The *Fbxo36* gene has 4 transcripts. According to the structure of *Fbxo36* gene, exon2 of *Fbxo36*-201(ENSMUST00000097672.4) transcript is recommended as the knockout region. The region contains 109bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fbxo36* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor was constructed. Cas9, sgRNA and Donor 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 flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- The *Fbxo36* gene is located on the Chr1. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Fbxo36 F-box protein 36 [Mus musculus (house mouse)]

Gene ID: 66153, updated on 17-Dec-2020

Summary



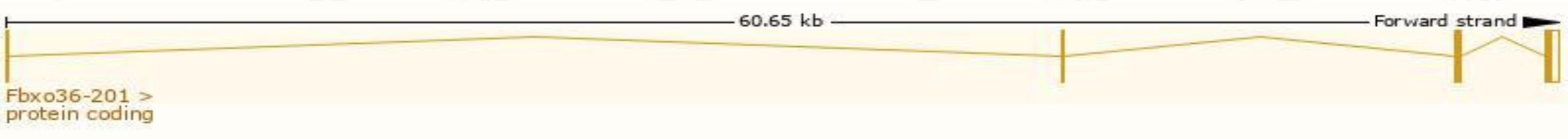
Official Symbol	Fbxo36 provided by MGI
Official Full Name	F-box protein 36 provided by MGI
Primary source	MGI:MGI:1289192
See related	Ensembl:ENSMUSG00000073633
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	0610008D19Rik, 1110020F21Rik, 2410002G19Rik, D1Ert757, D1Ert757e
Expression	Biased expression in testis adult (RPKM 36.3), kidney adult (RPKM 5.2) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

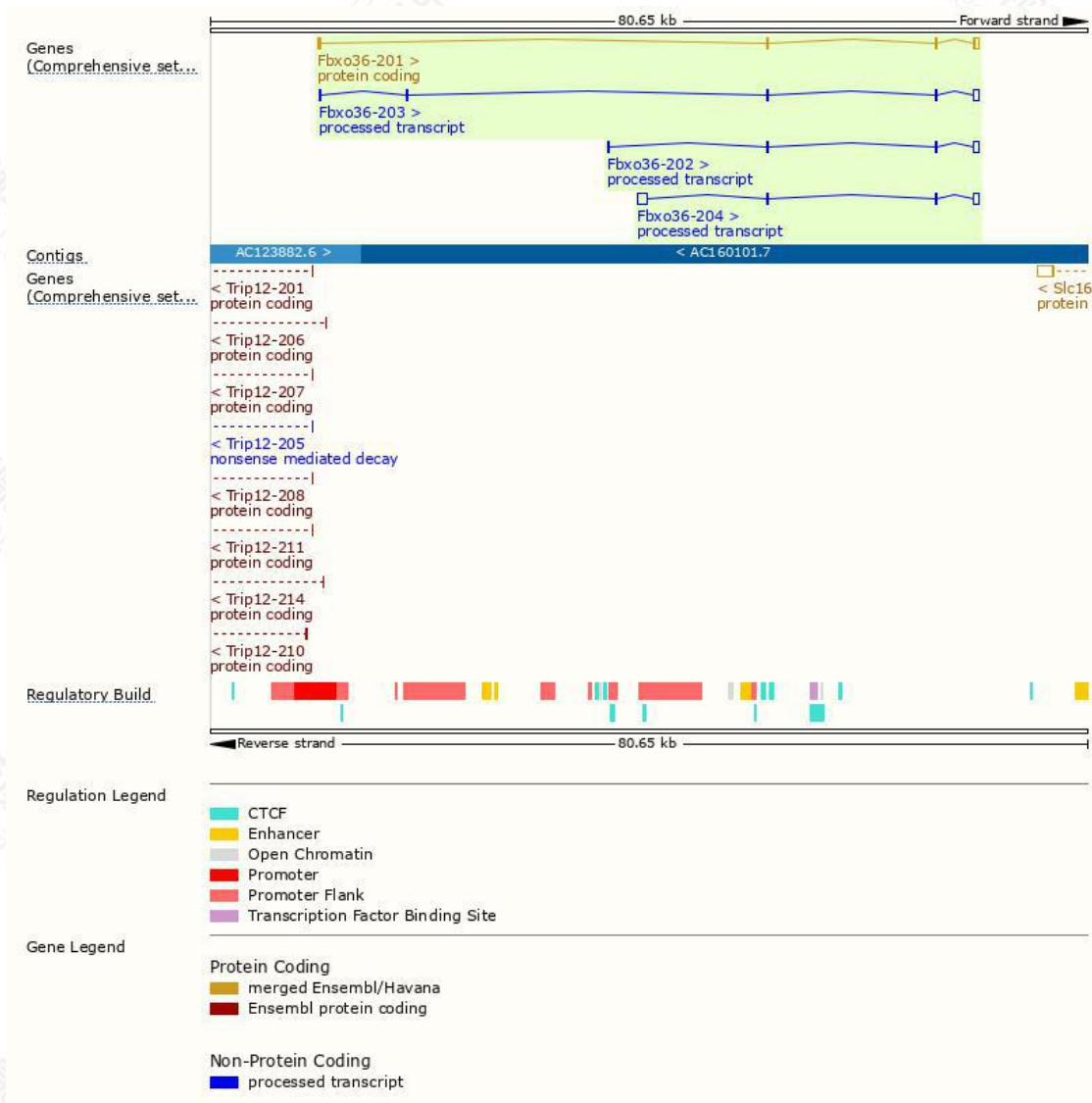
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fbxo36-201	ENSMUST00000097672.4	901	188aa	Protein coding	CCDS35634		TSL:1 , GENCODE basic , APPRIS P1 ,
Fbxo36-204	ENSMUST00000151737.2	1713	No protein	Processed transcript	-		TSL:1 ,
Fbxo36-203	ENSMUST00000143656.8	1088	No protein	Processed transcript	-		TSL:3 ,
Fbxo36-202	ENSMUST00000139562.8	881	No protein	Processed transcript	-		TSL:1 ,

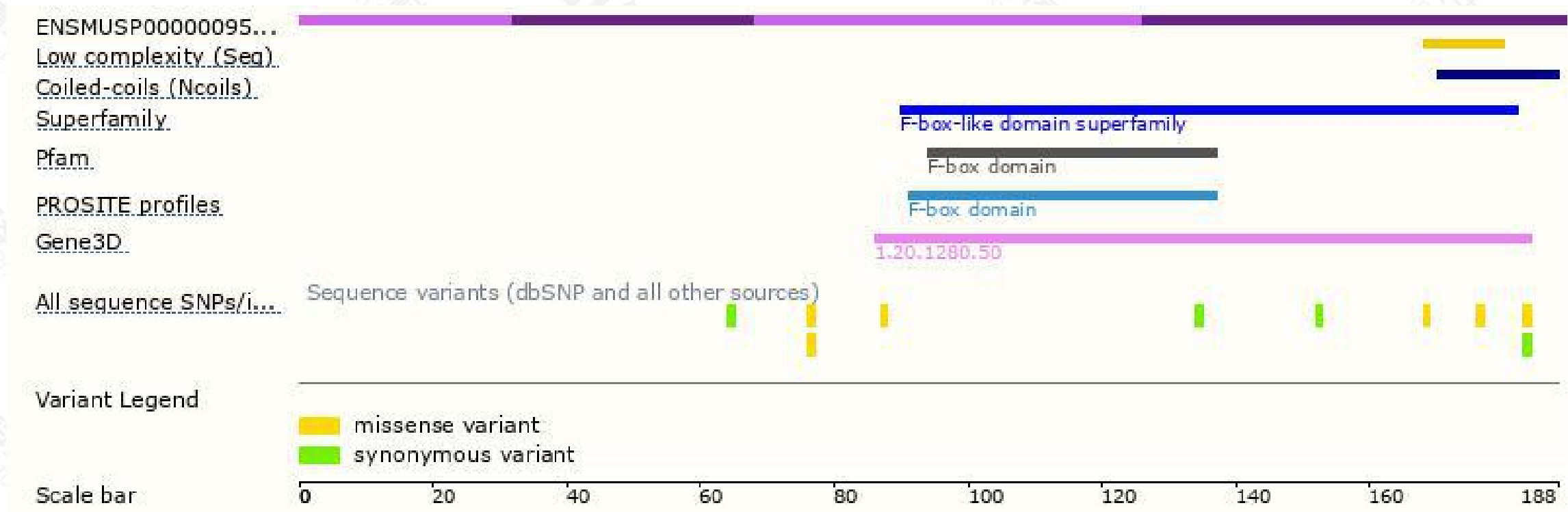
The strategy is based on the design of *Fbxo36-201* transcript,the transcription is shown below:



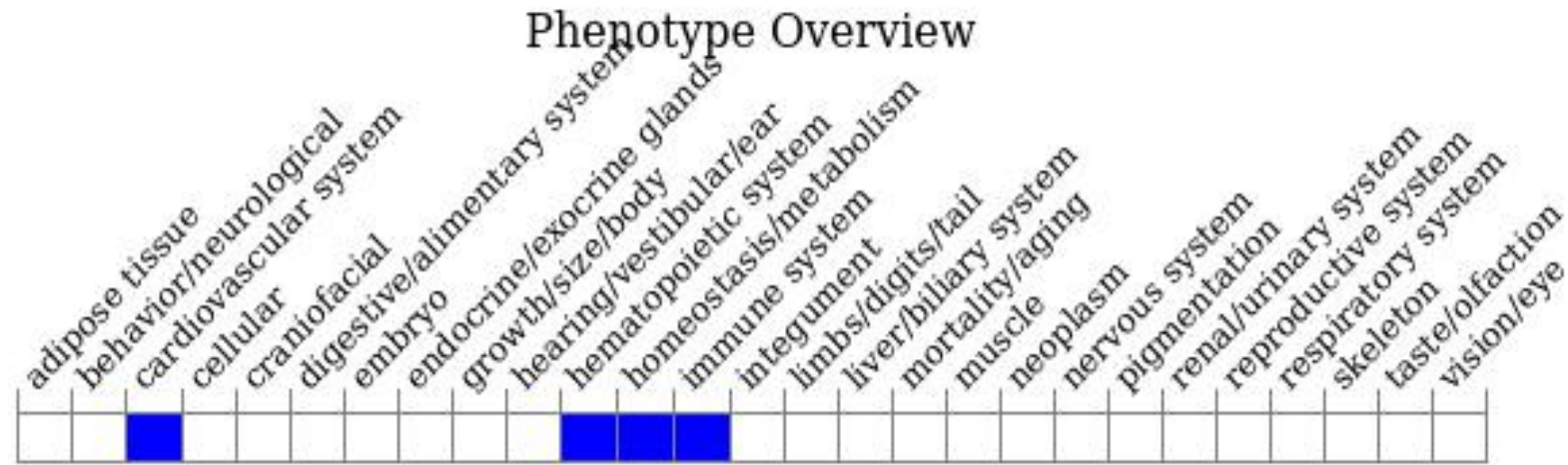
Genomic location distribution



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.

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