

***Fbxo45* Cas9-KO Strategy**

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Project Overview

Project Name

Fbxo45

Project type

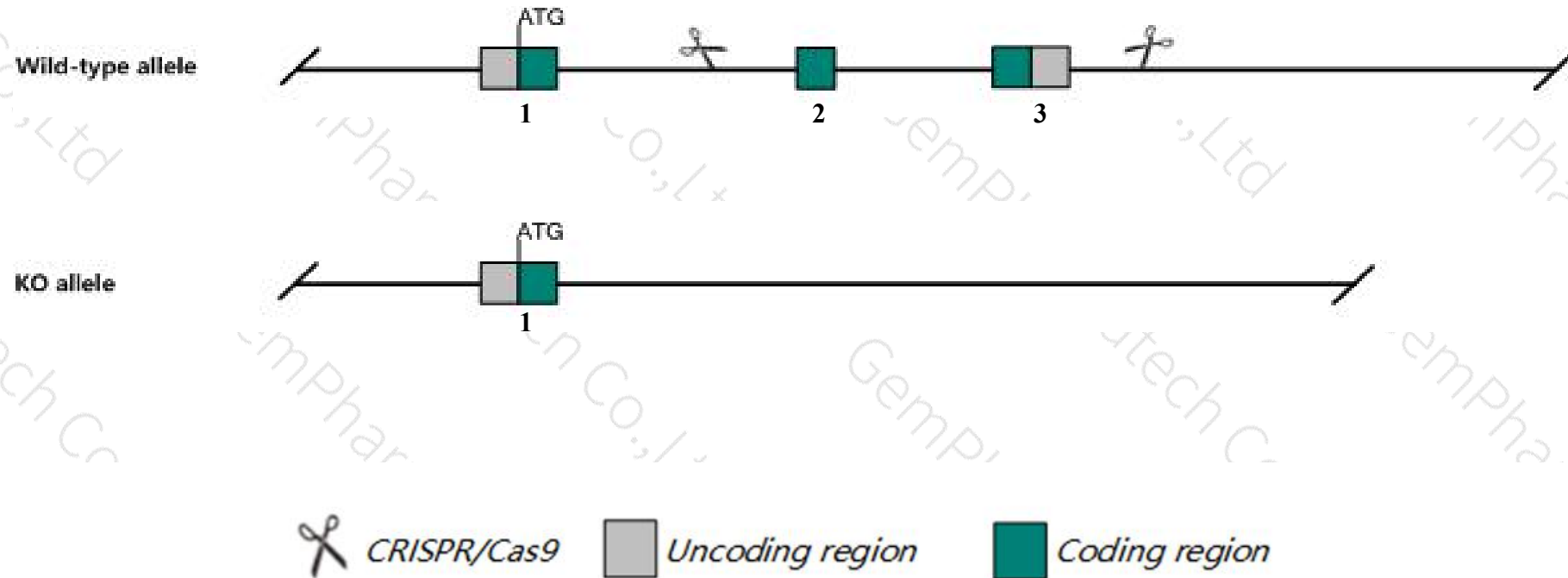
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fbxo45* gene. The schematic diagram is as follows:



- The *Fbxo45* gene has 1 transcript. According to the structure of *Fbxo45* gene, exon2-exon3 of *Fbxo45-201* (ENSMUST00000042732.5) transcript is recommended as the knockout region. The region contains 543bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fbxo45* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null mutation display neonatal lethality with respiratory failure, impaired motor neuron innervation and neuromuscular synapse morphology, abnormal sensory neuron projections, absence of several of the major axon tracts in the brain, and impaired neuron migration.
- The *Fbxo45* gene is located on the Chr16. 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)

Fbxo45 F-box protein 45 [Mus musculus (house mouse)]

Gene ID: 268882, updated on 31-Jan-2019

Summary



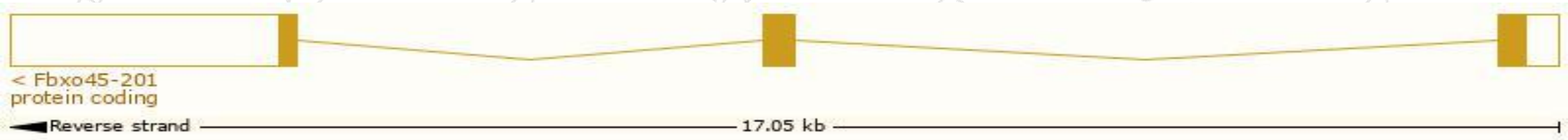
Official Symbol	Fbxo45 provided by MGI
Official Full Name	F-box protein 45 provided by MGI
Primary source	MGI:MGI:2447775
See related	Ensembl:ENSMUSG00000035764
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610017J04Rik, AI463119, BC026799
Expression	Ubiquitous expression in CNS E18 (RPKM 9.9), cerebellum adult (RPKM 8.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

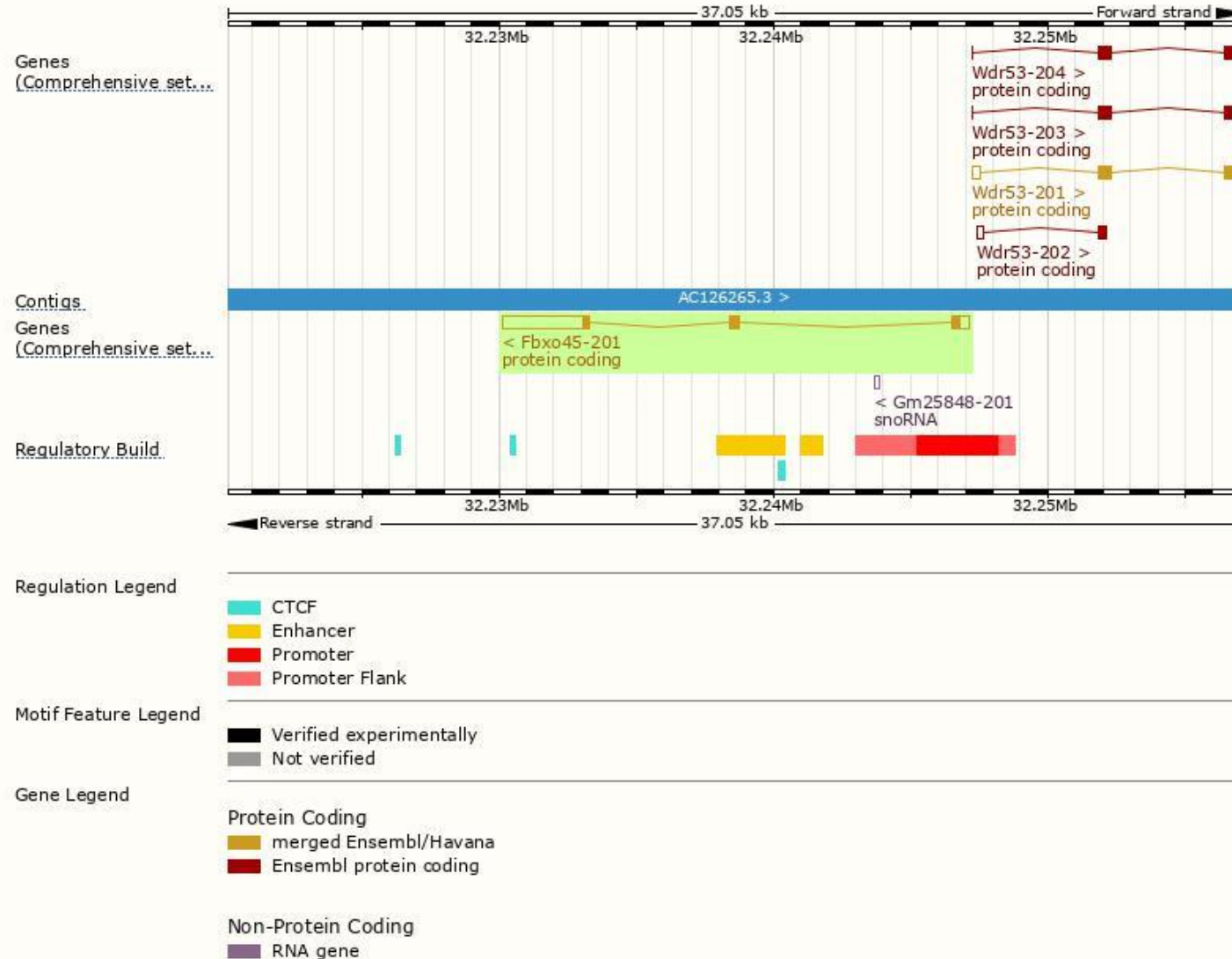
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fbxo45-201	ENSMUST00000042732.5	4179	286aa	Protein coding	CCDS28117	Q8K3B1	TSL:1 GENCODE basic APPRIS P1

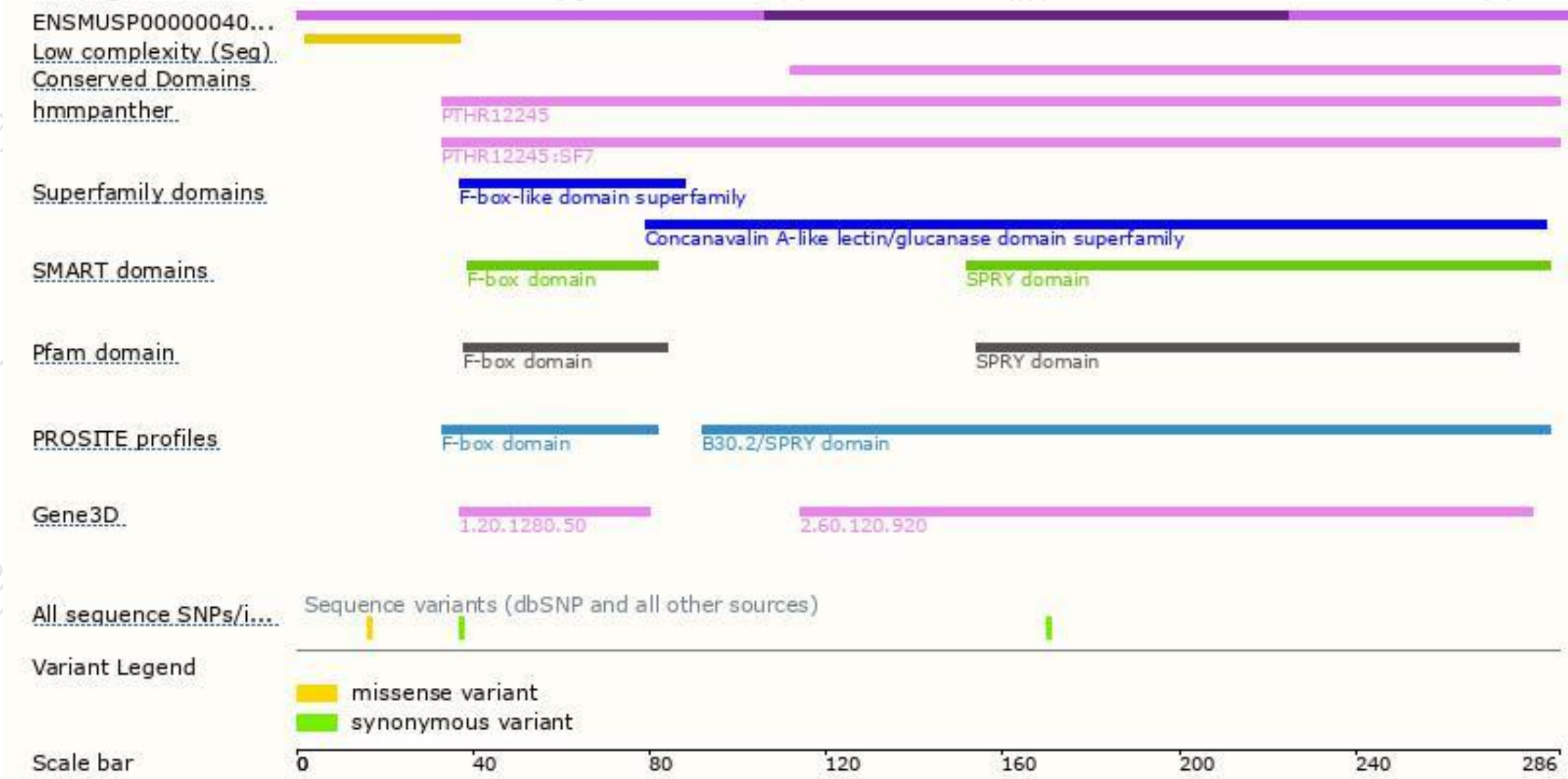
The strategy is based on the design of *Fbxo45-201* transcript, The transcription is shown below



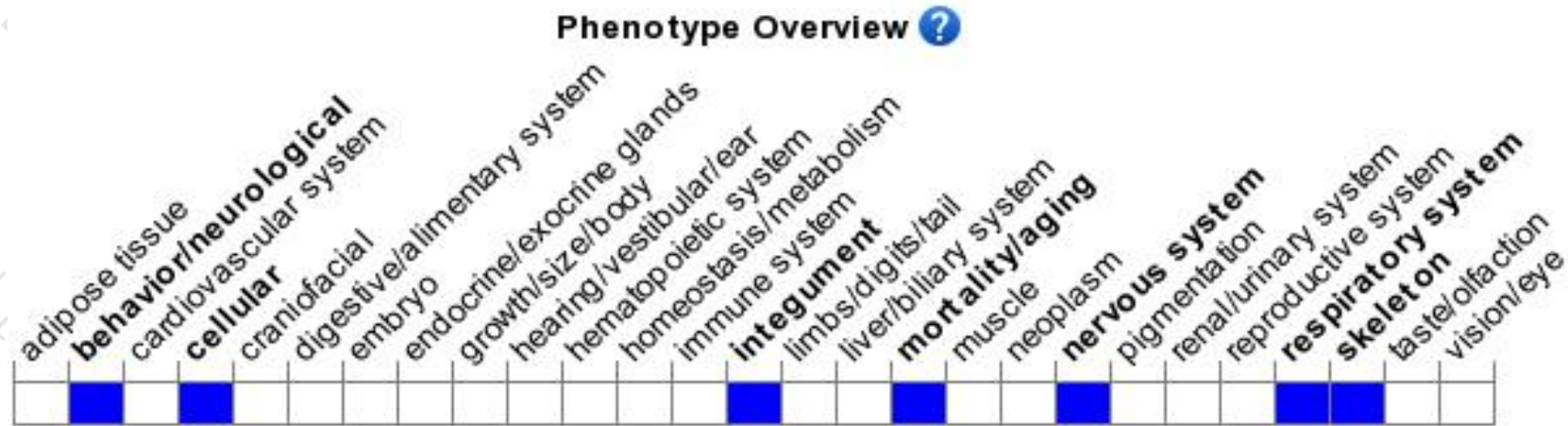
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a null mutation display neonatal lethality with respiratory failure, impaired motor neuron innervation and neuromuscular synapse morphology, abnormal sensory neuron projections, absence of several of the major axon tracts in the brain, and impaired neuron migration.

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

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