

# *Fbxl20* Cas9-KO Strategy

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**Reviewer:**

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**2019-9-25**

# Project Overview

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**Project Name**

***Fbxl20***

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**Project type**

**Cas9-KO**

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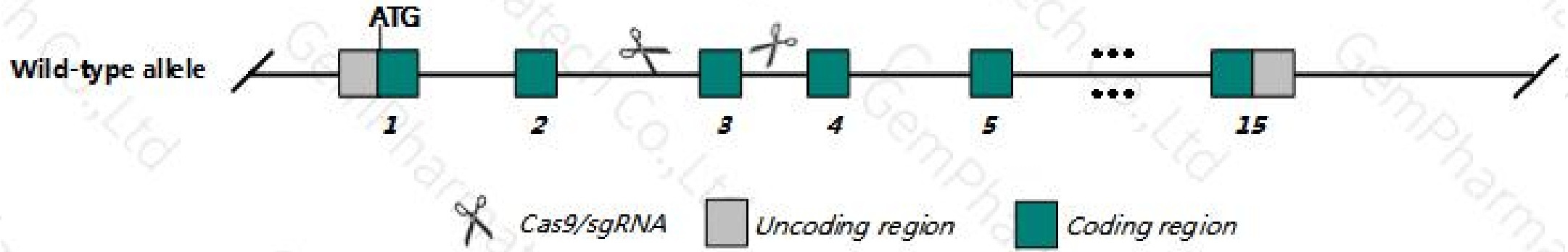
**Strain background**

**C57BL/6N**

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# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fbxl20* gene. The schematic diagram is as follows:



- In this project we use CRISPR/Cas9 technology to modify *Fbxl20* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6N 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/6N mice.

- According to the existing MGI data, Mice homozygous for a null allele exhibit some embryonic lethality, shortened lifespans, decreased body size and altered CNS synaptic transmission.
- The *Fbxl20* gene is located on the Chr11. 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)

## Fbxl20 F-box and leucine-rich repeat protein 20 [ *Mus musculus* (house mouse) ]

Gene ID: 72194, updated on 12-Aug-2019

### Summary

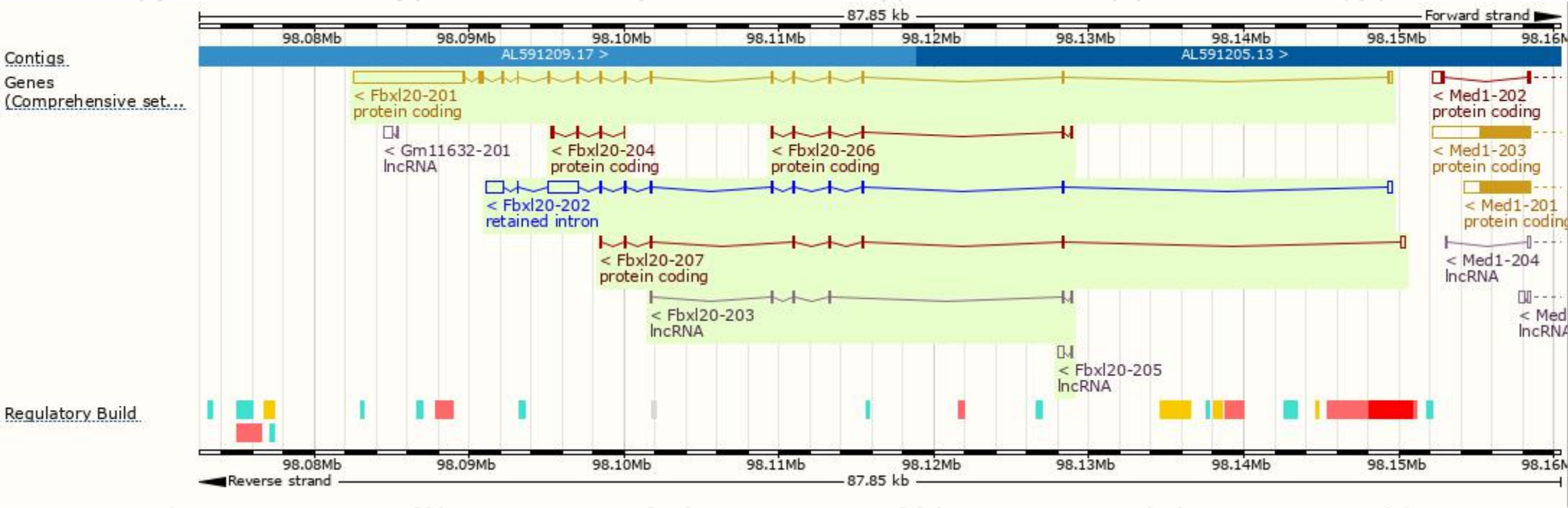
Official Symbol	Fbxl20 provided by MGI
Official Full Name	F-box and leucine-rich repeat protein 20 provided by MGI
Primary source	<a href="#">MGI:MGI:1919444</a>
See related	<a href="#">Ensembl:ENSMUSG00000020883</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Scr; Fbl2; C86145; AI849362; AL117906; mKIAA4147; 2610511F20Rik; 4632423N09Rik
Expression	Ubiquitous expression in adrenal adult (RPKM 14.8), thymus adult (RPKM 11.5) and 28 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

The gene has 7 transcripts,all transcripts are shown below:

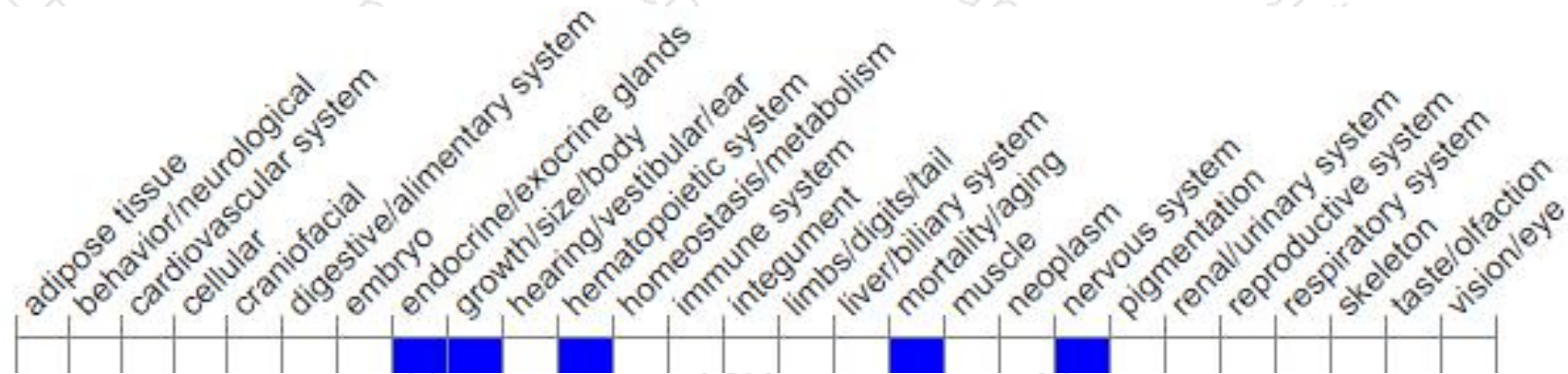
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fbxl20-201	<a href="#">ENSMUST00000103143.9</a>	8601	<a href="#">436aa</a>	Protein coding	<a href="#">CCDS25339</a>	<a href="#">Q9CZV8</a>	TSL:1 GENCODE basic APPRIS P1
Fbxl20-207	<a href="#">ENSMUST00000150378.7</a>	871	<a href="#">210aa</a>	Protein coding	-	<a href="#">A2A536</a>	CDS 3' incomplete TSL:5
Fbxl20-204	<a href="#">ENSMUST00000147971.1</a>	522	<a href="#">142aa</a>	Protein coding	-	<a href="#">A2A550</a>	CDS 5' incomplete TSL:2
Fbxl20-206	<a href="#">ENSMUST00000149327.2</a>	428	<a href="#">110aa</a>	Protein coding	-	<a href="#">A2A533</a>	CDS 3' incomplete TSL:2
Fbxl20-202	<a href="#">ENSMUST00000135969.7</a>	4028	No protein	Retained intron	-	-	TSL:2
Fbxl20-205	<a href="#">ENSMUST00000148473.1</a>	474	No protein	lncRNA	-	-	TSL:2
Fbxl20-203	<a href="#">ENSMUST00000146399.7</a>	455	No protein	lncRNA	-	-	TSL:3

# Genomic location distribution





# 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 allele exhibit some embryonic lethality, shortened lifespans, decreased body size and altered CNS synaptic transmission

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

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