

Igf2bp3 Cas9-CKO Strategy

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Project Overview

Project Name

Igf2bp3

Project type

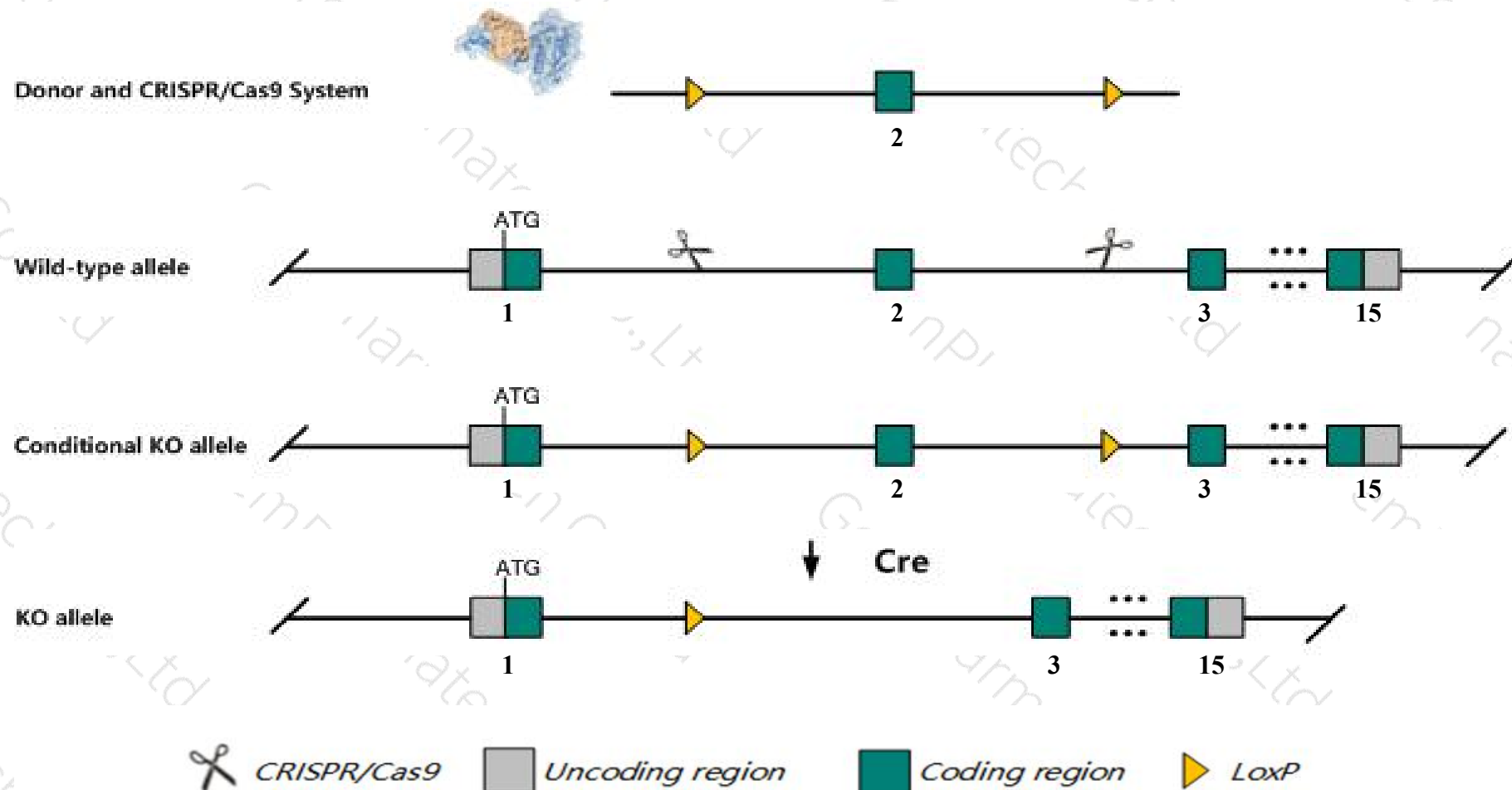
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Igf2bp3* gene. The schematic diagram is as follows:



- The *Igf2bp3* gene has 5 transcripts. According to the structure of *Igf2bp3* gene, exon2 of *Igf2bp3-201* (ENSMUST00000031838.8) transcript is recommended as the knockout region. The region contains 61bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Igf2bp3* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be 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.

Notice

- The *Igf2bp3* gene is located on the Chr6. 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)

Igf2bp3 insulin-like growth factor 2 mRNA binding protein 3 [Mus musculus (house mouse)]

Gene ID: 140488, updated on 7-Apr-2019

Summary



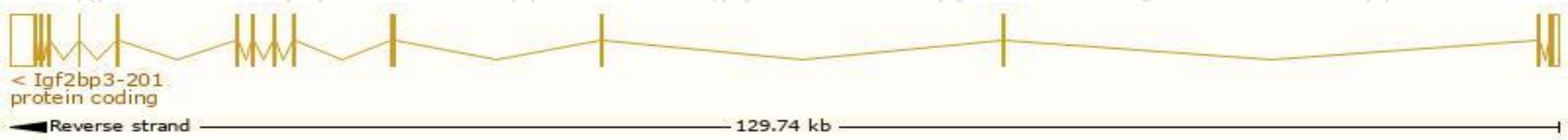
Official Symbol	Igf2bp3 provided by MGI
Official Full Name	insulin-like growth factor 2 mRNA binding protein 3 provided by MGI
Primary source	MGI:MGI:1890359
See related	Ensembl:ENSMUSG00000029814
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610101N11Rik, AA522010, AL022933, AU045931, IMP-3, IMP3, Koc13, Neilsen, mimp3
Expression	Biased expression in CNS E11.5 (RPKM 14.8), testis adult (RPKM 10.2) and 8 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

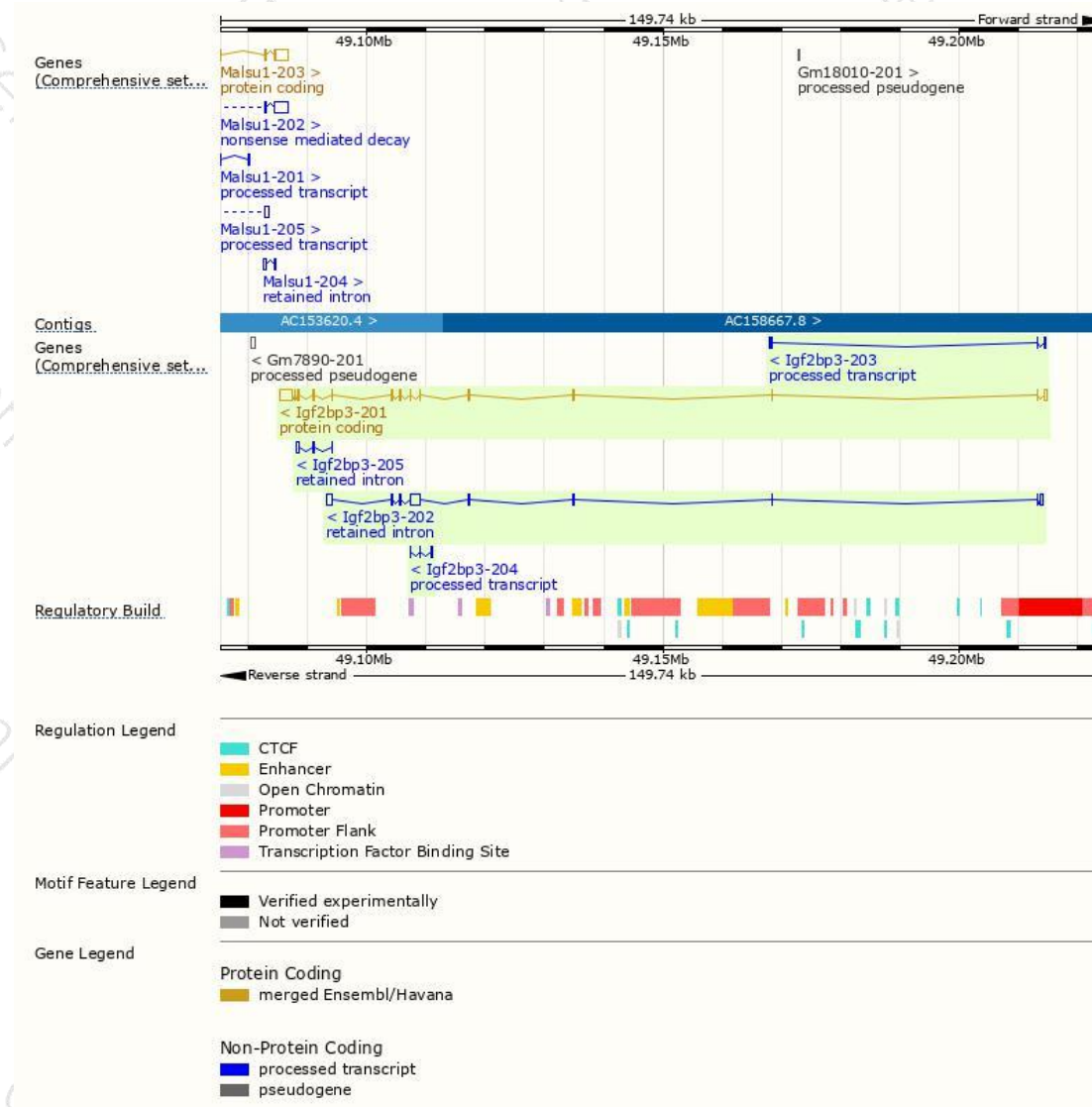
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Igf2bp3-201	ENSMUST00000031838.8	4345	579aa	Protein coding	CCDS39485	Q9CPN8	TSL:1 GENCODE basic APPRIS P1
Igf2bp3-203	ENSMUST00000203680.1	711	No protein	Processed transcript	-	-	TSL:1
Igf2bp3-204	ENSMUST00000203863.1	512	No protein	Processed transcript	-	-	TSL:5
Igf2bp3-202	ENSMUST00000203544.2	4152	No protein	Retained intron	-	-	TSL:2
Igf2bp3-205	ENSMUST00000205057.1	581	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Igf2bp3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain

ENSMUSP00000031...

MobiDB lite

Low complexity (Seg)

Conserved Domains

Coiled-coils (Ncoils)

hmmpanther

PTHR10288:SF158

PTHR10288

Superfamily domains

RNA-binding domain superfamily

K Homology domain, type 1 superfamily

SMART domains

RNA recognition motif domain

K Homology domain

Pfam domain

RNA recognition motif domain

K Homology domain, type 1

PROSITE profiles

RNA recognition motif domain

PS50084

Gene3D

Nucleotide-binding alpha-beta plat domain superfamily

3.30.310.210

K Homology domain, type 1 superfamily

All sequence SNPs/i....

Sequence variants (dbSNP and all other sources)

Variant Legend

missense variant

synonymous variant

Scale bar

0 60 120 180 240 300 360 420 480 579

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

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