Adipor2 Cas9-CKO Strategy

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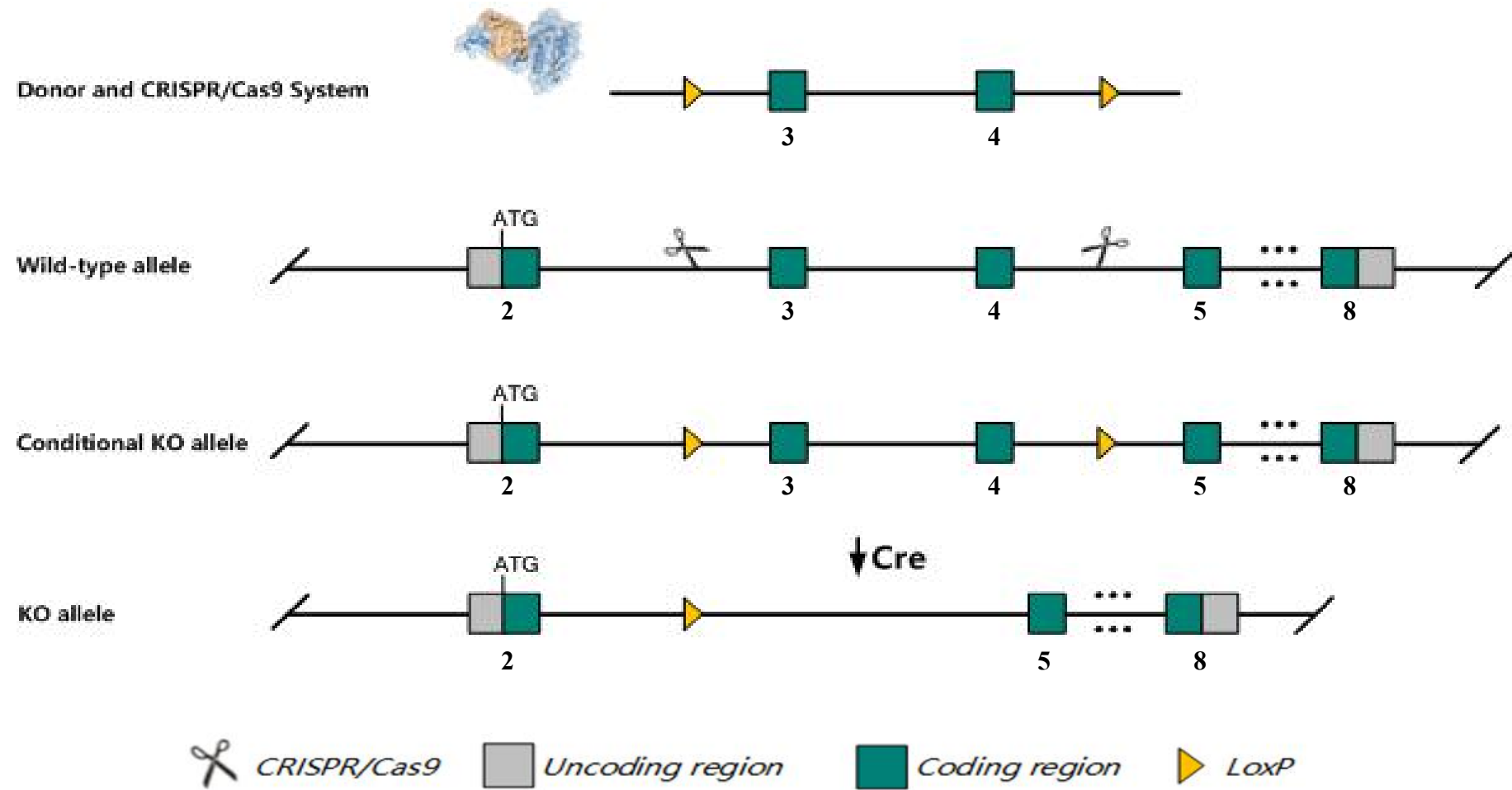| Project Name	*Adipor2*
Project type	Cas9-CKO
Strain background	C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adipor2* gene. The schematic diagram is as follows:

Technical routes

The *Adipor2* gene has 5 transcripts. According to the structure of *Adipor2* gene, exon3-exon4 of *Adipor2-201* (ENSMUST00000032272.12) transcript is recommended as the knockout region.The region contains 292bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Adipor2* 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

According to the existing MGI data,Mice homozygous for disruptions in this gene display small testes and

epididymis, degeneration of the seminiferous tubules, abnormal sperm maturation and abnormal thermogenesis.

Transcript *Adipor2-205* may not be affected.

The *Adipor2* 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

Adipor2 adiponectin receptor 2 [Mus musculus (house mouse)]

Gene ID: 68465, updated on 19-Mar-2019

▲ Summary

|	
Official Symbol	Adipor2 provided by MGI
Official Full Name	adiponectin receptor 2 provided by MGI
Primary source	MGI:MGI:93830
See related	Ensembl:ENSMUSG00000030168
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	1110001I14Rik, ADCR2, AI115388, AW554121, D6Ucla1e, Paqr2
Expression	Ubiquitous expression in mammary gland adult (RPKM 96.4), liver adult (RPKM 91.0) and 28 other tissuesSee 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
Adipor2-201	ENSMUST00000032272.12	4184	386aa	Protein coding	CCDS20473	Q53YY3 Q8BQS5	TSL:1 GENCODE basic APPRIS P1
Adipor2-202	ENSMUST00000169744.7	3489	386aa	Protein coding	CCDS20473	Q53YY3 Q8BQS5	TSL:1 GENCODE basic APPRIS P1
Adipor2-205	ENSMUST00000189710.1	579	56aa	Protein coding	-	A0A087WPS4	CDS 3' incomplete TSL:3
Adipor2-203	ENSMUST00000187699.6	1672	110aa	Nonsense mediated decay	-	A0A087WPB1	TSL:1
Adipor2-204	ENSMUST00000188851.1	2433	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Adipor2-201* transcript,The transcription is shown below
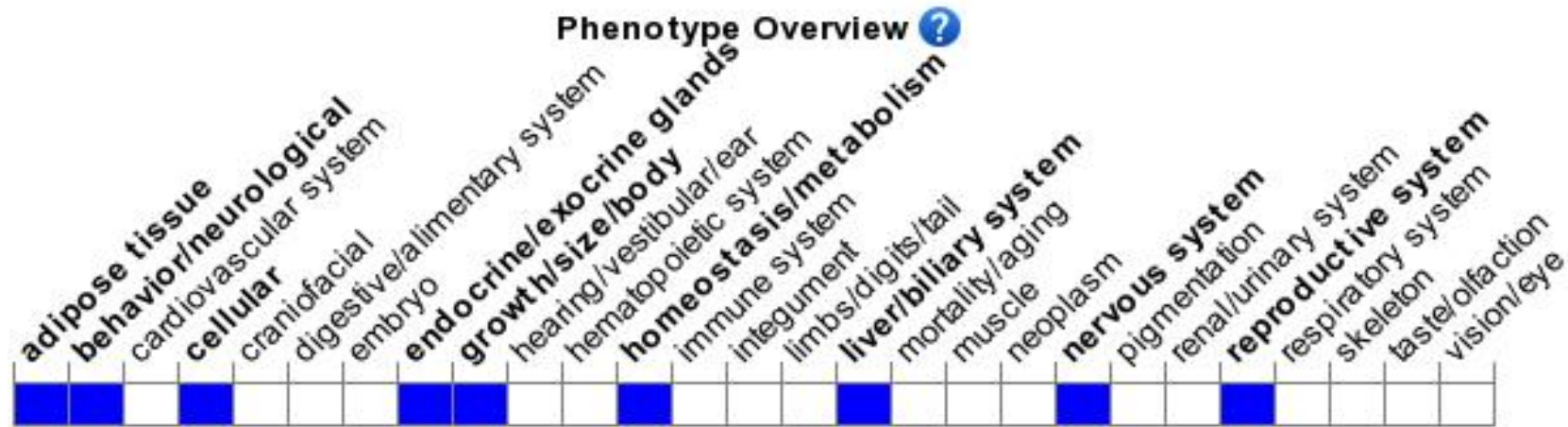

< Adipor2-201
protein coding

◄ Reverse strand

64.56 kb
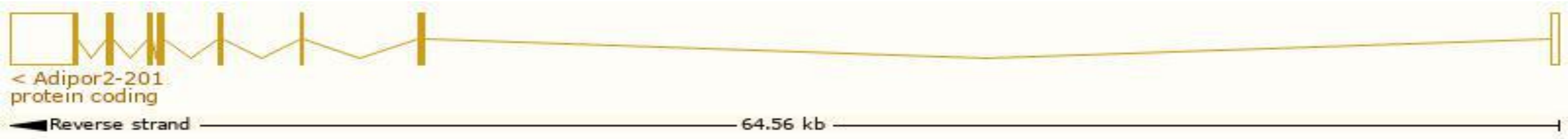
Protein domain
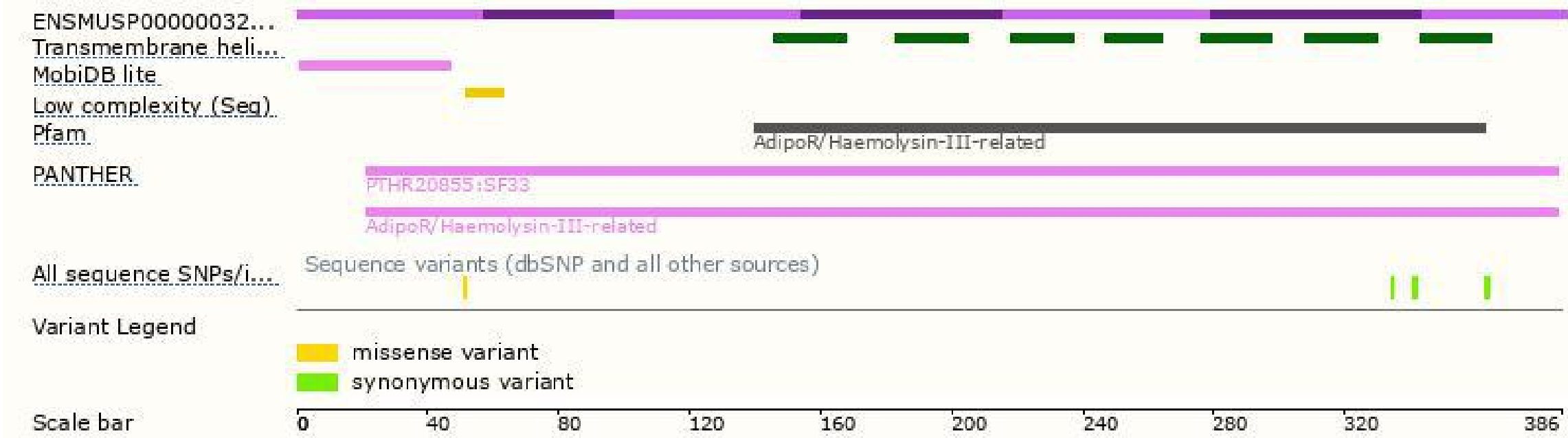
Mouse phenotype description(MGI)

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 disruptions in this gene display small testes and epididymis, degeneration of the seminiferous tubules, abnormal sperm maturation and abnormal thermogenesis.

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