

Adipor2 Cas9-KO Strategy

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Project Overview

Project Name

Adipor2

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- 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

- 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

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

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

Summary



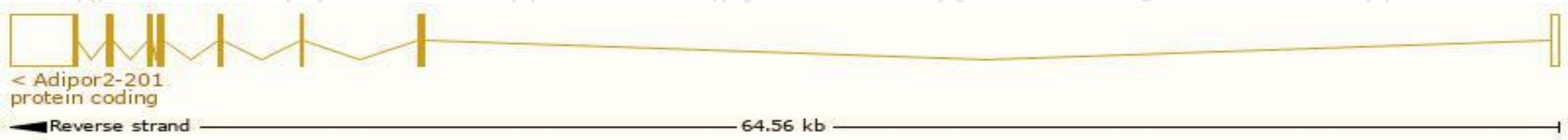
Official Symbol	Adipor2 provided by MGI
Official Full Name	adiponectin receptor 2 provided by MGI
Primary source	MGI:MGI:93830
See related	Ensembl:ENSMUSG00000030168
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110001114Rik, ADCR2, AI115388, AW554121, D6Ucla1e, Paqr2
Expression	Ubiquitous expression in mammary gland adult (RPKM 96.4), liver adult (RPKM 91.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

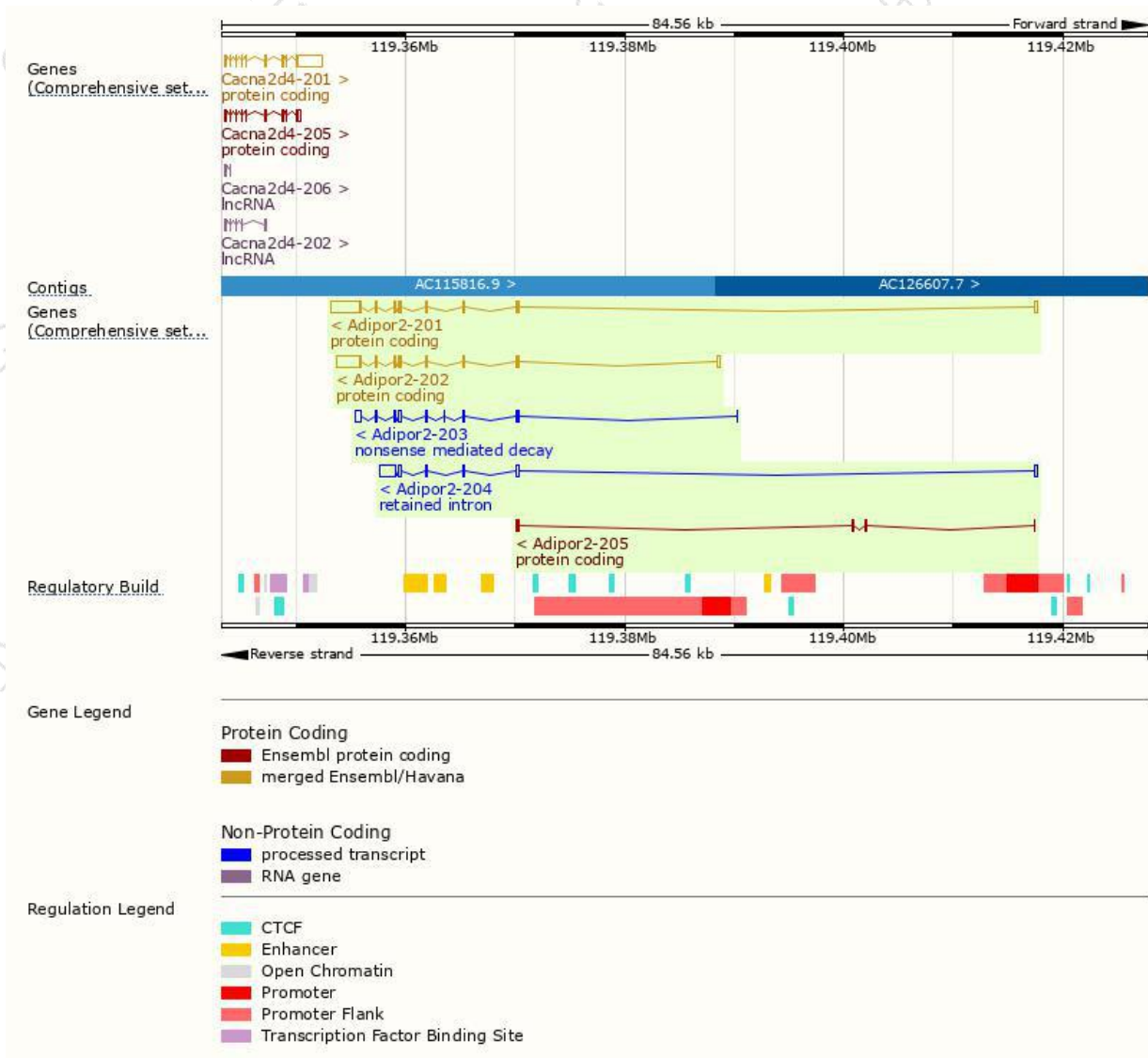
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
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

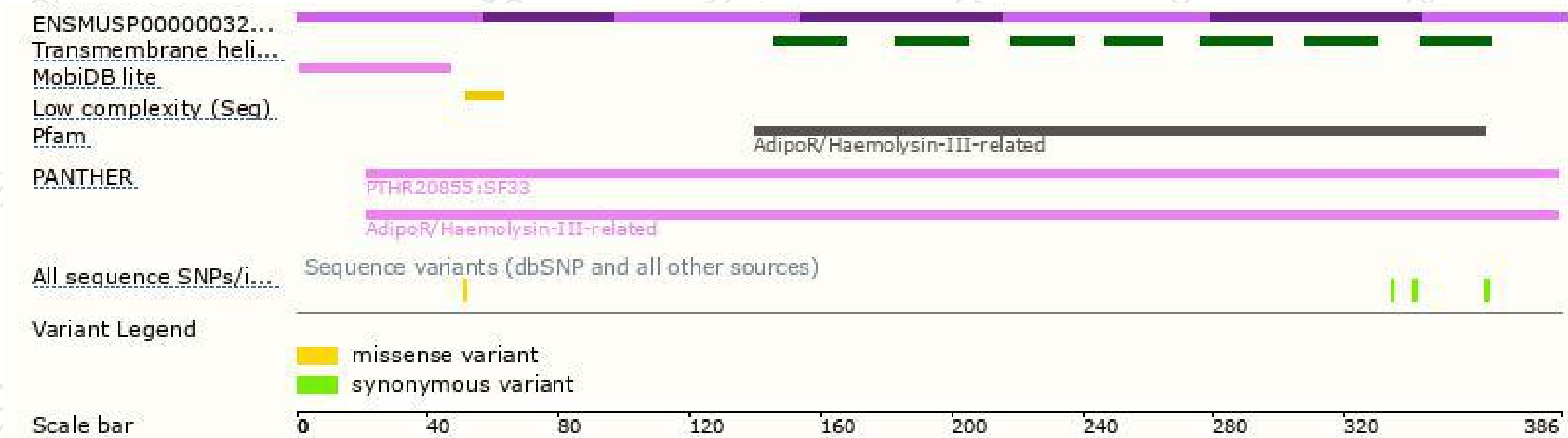
The strategy is based on the design of *Adipor2-201* transcript,The transcription is shown below



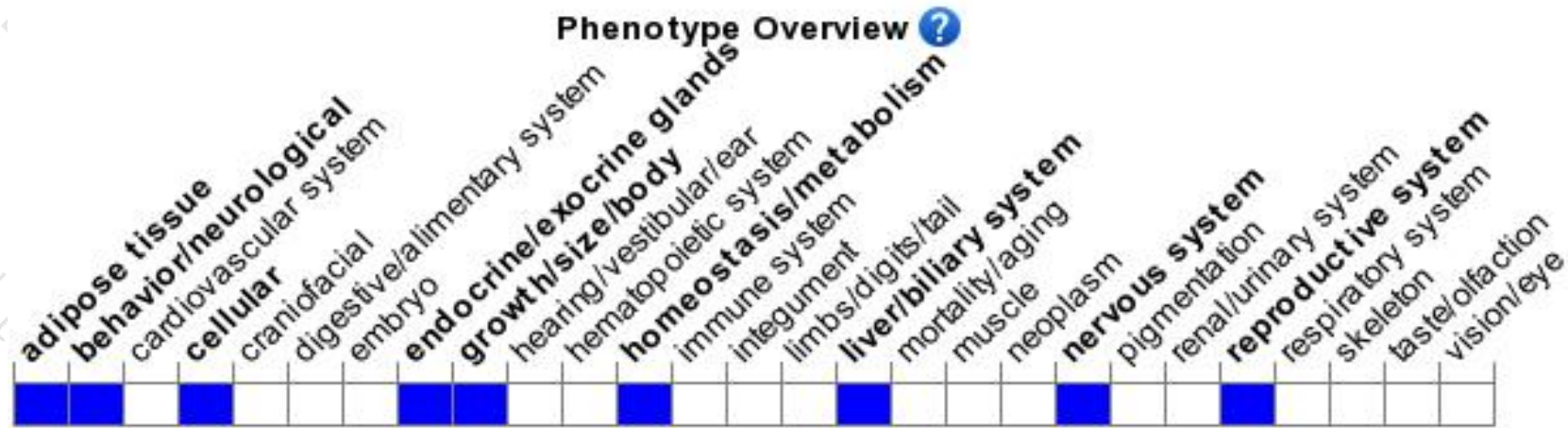
Genomic location distribution



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/>).

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

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