

Atad2 Cas9-KO Strategy

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Design Date:

2019-9-3

Project Overview

Project Name

Atad2

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atad2* gene. The schematic diagram is as follows:



- The *Atad2* gene has 8 transcripts. According to the structure of *Atad2* gene, exon2-exon13 of *Atad2-201* (ENSMUST00000038194.4) transcript is recommended as the knockout region. The region contains 1415bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atad2* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Atad2* gene is located on the Chr15. 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)

Atad2 ATPase family, AAA domain containing 2 [Mus musculus (house mouse)]

Gene ID: 70472, updated on 31-Jan-2019

Summary



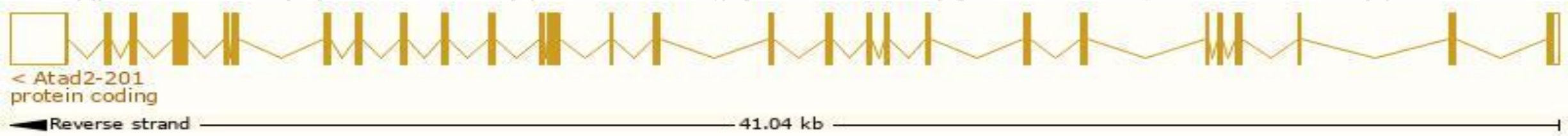
Official Symbol	Atad2 provided by MGI
Official Full Name	ATPase family, AAA domain containing 2 provided by MGI
Primary source	MGI:MGI:1917722
See related	Ensembl:ENSMUSG00000022360
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610509G12Rik
Expression	Broad expression in liver E14 (RPKM 11.8), CNS E11.5 (RPKM 11.6) and 19 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

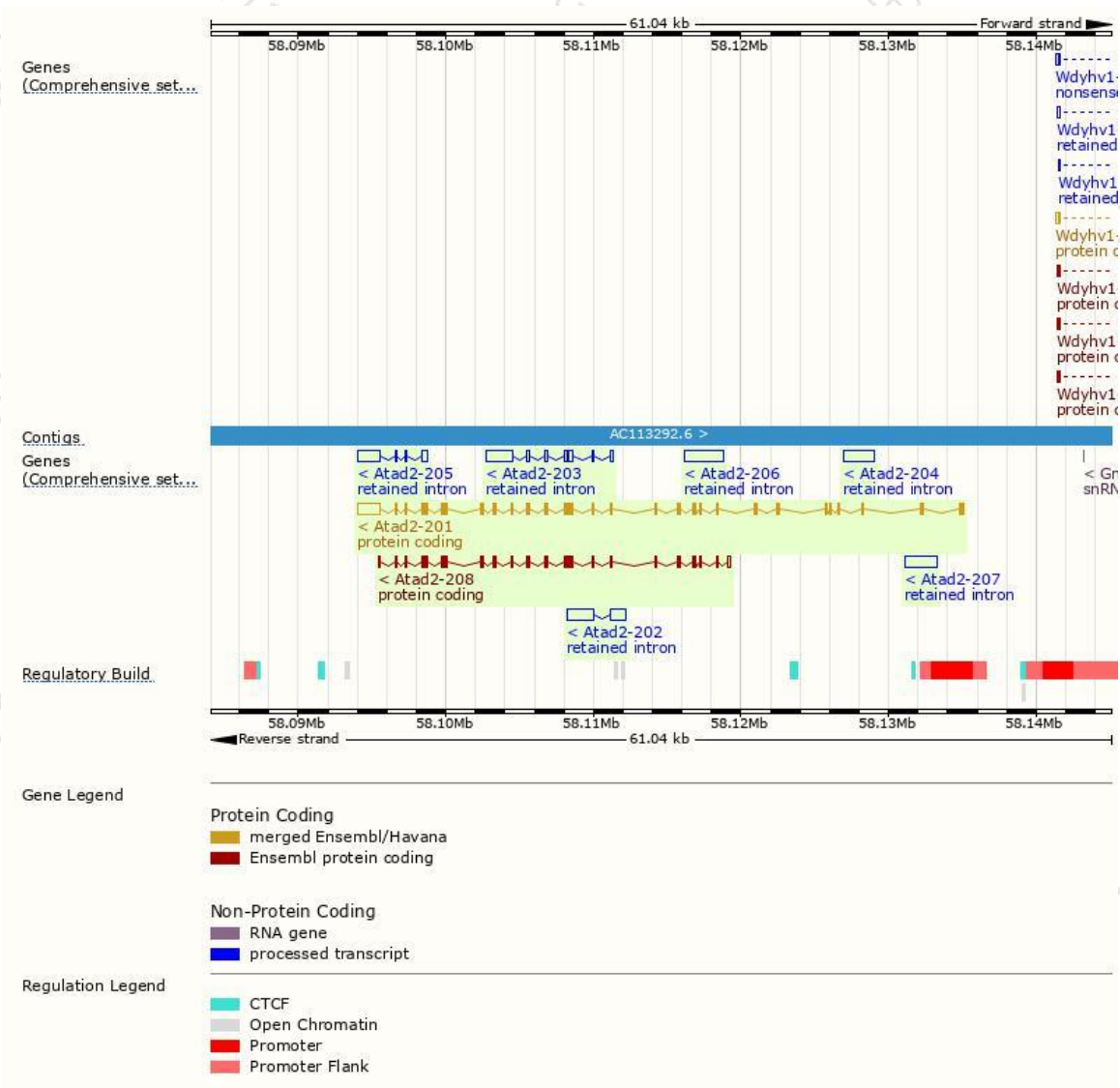
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atad2-201	ENSMUST00000038194.4	5684	1364aa	Protein coding	CCDS37079	G3X963	TSL:5 GENCODE basic APPRIS P2
Atad2-208	ENSMUST00000228783.1	3472	1040aa	Protein coding	-	Q8CDM1	GENCODE basic APPRIS ALT2
Atad2-203	ENSMUST00000226526.1	2934	No protein	Retained intron	-	-	
Atad2-202	ENSMUST00000226507.1	2826	No protein	Retained intron	-	-	
Atad2-206	ENSMUST00000227134.1	2664	No protein	Retained intron	-	-	
Atad2-205	ENSMUST00000226649.1	2209	No protein	Retained intron	-	-	
Atad2-207	ENSMUST00000227171.1	2141	No protein	Retained intron	-	-	
Atad2-204	ENSMUST00000226582.1	2047	No protein	Retained intron	-	-	

The strategy is based on the design of *Atad2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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