

Atg4d Cas9-KO Strategy

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Project Overview

Project Name

Atg4d

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atg4d* gene. The schematic diagram is as follows:



- The *Atg4d* gene has 5 transcripts. According to the structure of *Atg4d* gene, exon2-exon6 of *Atg4d-201* (ENSMUST00000065005.4) transcript is recommended as the knockout region. The region contains 731bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atg4d* gene. The brief process is as follows: CRISPR/Cas9 system

- This strategy may not knock out the encoded transcript Atg4d-202.
- This strategy leaves 79 amino acid residues at the N-terminus.
- The *Atg4d* gene is located on the Chr9. 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)

Atg4d autophagy related 4D, cysteine peptidase [Mus musculus (house mouse)]

Gene ID: 235040, updated on 4-Mar-2019

Summary



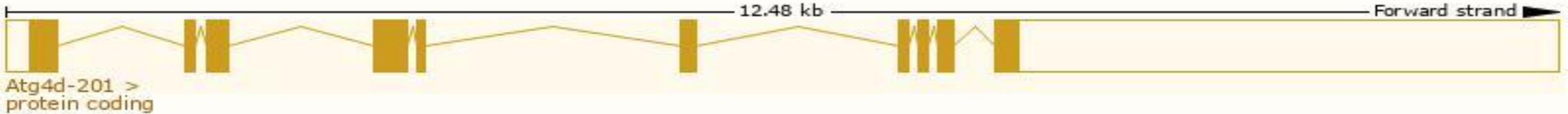
Official Symbol	Atg4d provided by MGI
Official Full Name	autophagy related 4D, cysteine peptidase provided by MGI
Primary source	MGI:MGI:2444308
See related	Ensembl:ENSMUSG000000002820
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9830134P12Rik, APG4-D, Apg4d, Atg4dl, Autl4
Expression	Ubiquitous expression in duodenum adult (RPKM 44.0), colon adult (RPKM 34.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

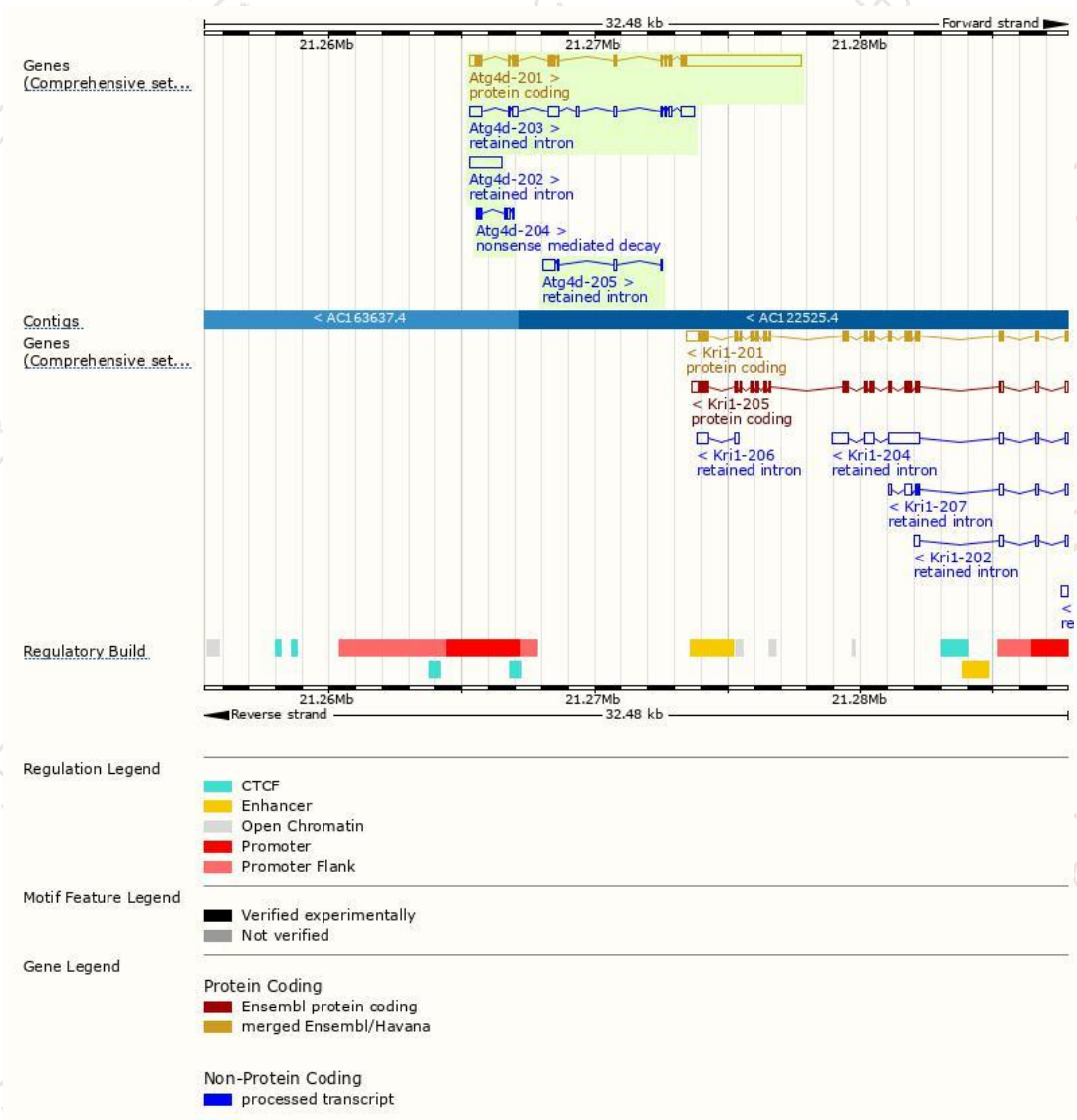
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atg4d-201	ENSMUST00000065005.4	5951	474aa	Protein coding	CCDS22899	Q8BGV9	TSL:1 GENCODE basic APPRIS P1
Atg4d-204	ENSMUST00000217269.1	445	100aa	Nonsense mediated decay	-	A0A1L1STB3	CDS 5' incomplete TSL:2
Atg4d-203	ENSMUST00000216826.1	2123	No protein	Retained intron	-	-	TSL:2
Atg4d-202	ENSMUST00000215767.1	1204	No protein	Retained intron	-	-	TSL:NA
Atg4d-205	ENSMUST00000217591.1	697	No protein	Retained intron	-	-	TSL:5

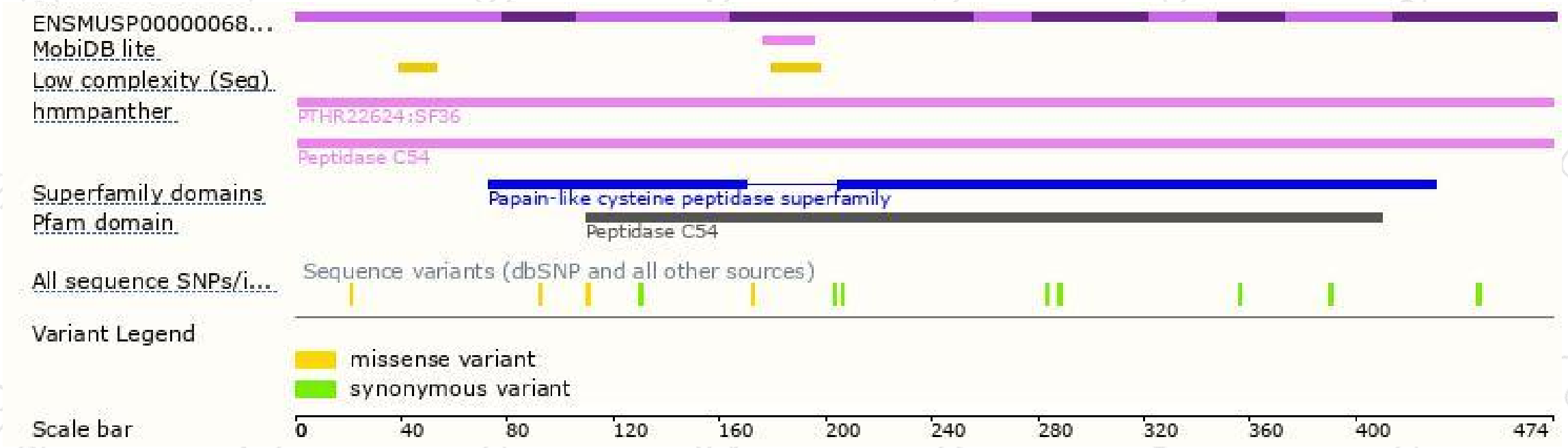
The strategy is based on the design of *Atg4d-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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