

***Abhd18* Cas9-KO Strategy**

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Project Overview

Project Name

Abhd18

Project type

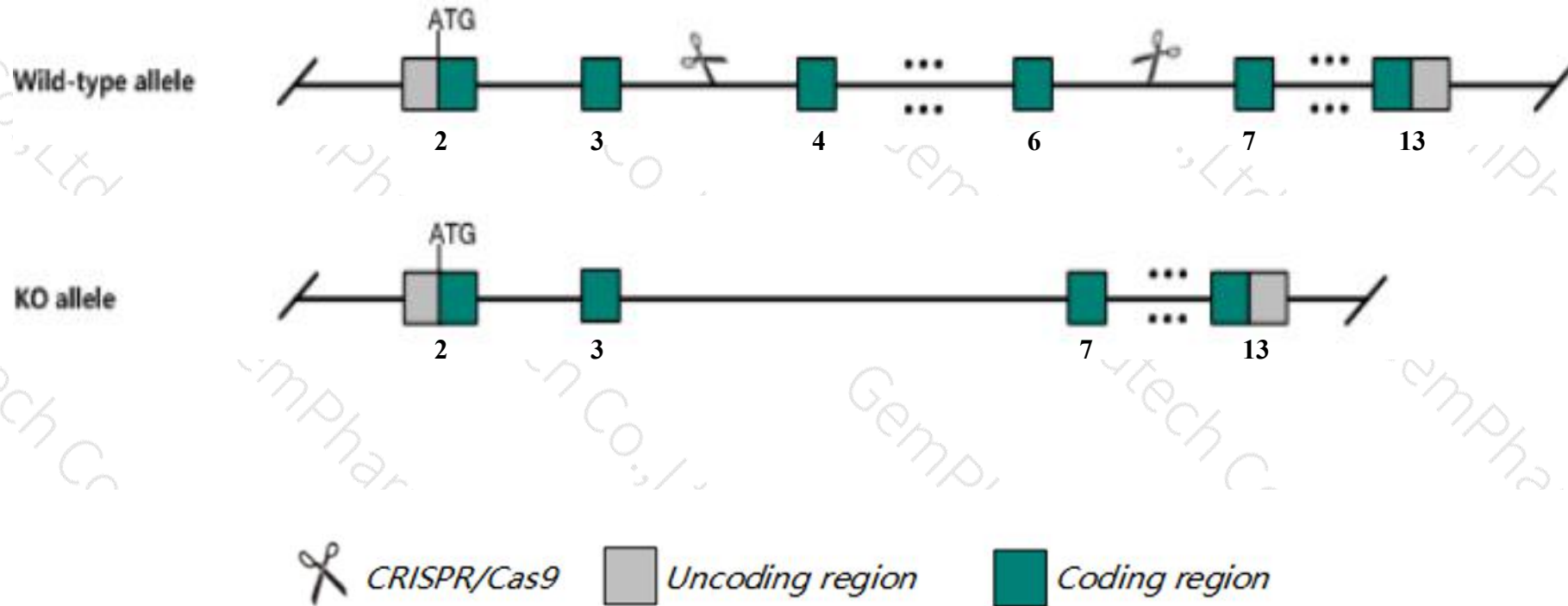
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Abhd18* gene. The schematic diagram is as follows:



- The *Abhd18* gene has 11 transcripts. According to the structure of *Abhd18* gene, exon4-exon6 of *Abhd18-201* (ENSMUST00000108077.9) transcript is recommended as the knockout region. The region contains 265bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Abhd18* gene. The brief process is as follows: CRISPR/Cas9 system

- Transcript *Abhd18*-208 may not be affected.
- The knockout region is near to the N-terminal of *1700034I23Rik* gene, this strategy may influence the regulatory function of the N-terminal of *1700034I23Rik* gene.
- The *Abhd18* gene is located on the Chr3. 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)

Abhd18 abhydrolase domain containing 18 [*Mus musculus* (house mouse)]

Gene ID: 269423, updated on 15-Dec-2019

Summary

- Official Symbol** Abhd18 provided by [MGI](#)
- Official Full Name** abhydrolase domain containing 18 provided by [MGI](#)
- Primary source** [MGI:MGI:1915468](#)
- See related** [Ensembl:ENSMUSG00000037818](#)
- 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** AI645591; 2310068E01Rik; 3110057O12Rik
- Expression** Ubiquitous expression in heart adult (RPKM 6.0), frontal lobe adult (RPKM 3.4) and 26 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 3 B; 3

See Abhd18 in [Genome Data Viewer](#)

Exon count: 16

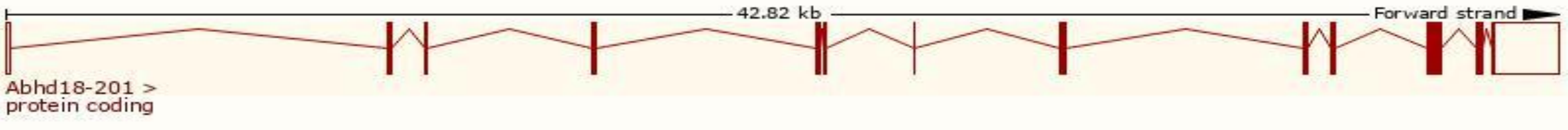
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	3	NC_000069.6 (40871095..40937736)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	3	NC_000069.5 (40698199..40740229)

Transcript information (Ensembl)

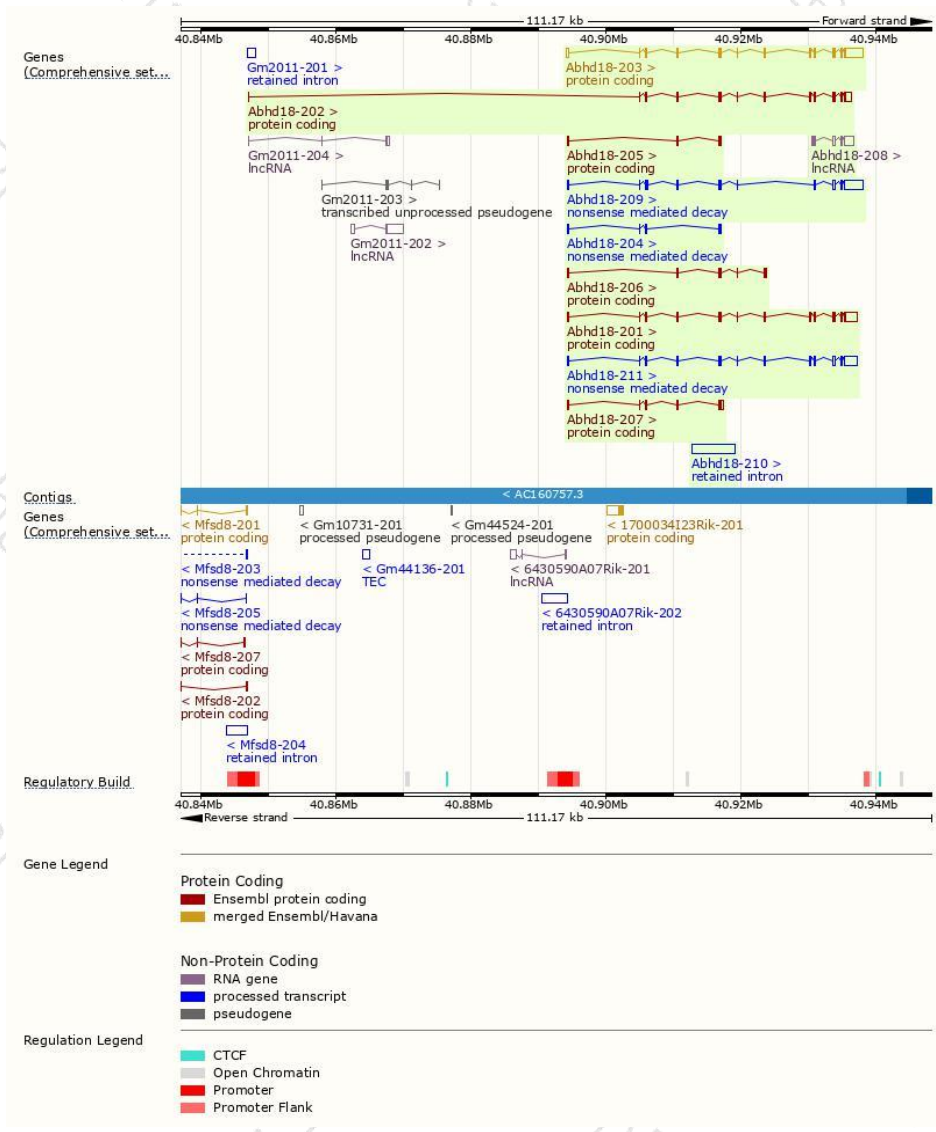
The gene has 11 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Abhd18-201	ENSMUST00000108077.9	3277	464aa	Protein coding	CCDS38422	Q8C1A9	TSL:1 GENCODE basic APPRIS P1
Abhd18-202	ENSMUST00000108078.8	2492	464aa	Protein coding	CCDS38422	Q8C1A9	TSL:1 GENCODE basic APPRIS P1
Abhd18-203	ENSMUST00000159774.6	4455	464aa	Protein coding	-	Q8C1A9	TSL:5 GENCODE basic APPRIS P1
Abhd18-207	ENSMUST00000203892.1	1021	151aa	Protein coding	-	E9PWH0	TSL:1 GENCODE basic
Abhd18-206	ENSMUST00000203650.2	797	130aa	Protein coding	-	E0CXW1	TSL:5 GENCODE basic
Abhd18-205	ENSMUST00000203472.2	588	75aa	Protein coding	-	E0CXU9	TSL:1 GENCODE basic
Abhd18-209	ENSMUST00000204496.2	4144	68aa	Nonsense mediated decay	-	E0CXH3	TSL:5
Abhd18-211	ENSMUST00000205065.2	3393	151aa	Nonsense mediated decay	-	E9PWH0	TSL:1
Abhd18-204	ENSMUST00000203214.2	623	65aa	Nonsense mediated decay	-	A0A0N4SV44	TSL:5
Abhd18-210	ENSMUST00000204797.1	6365	No protein	Retained intron	-	-	TSL:NA
Abhd18-208	ENSMUST00000204464.1	2080	No protein	lncRNA	-	-	TSL:1

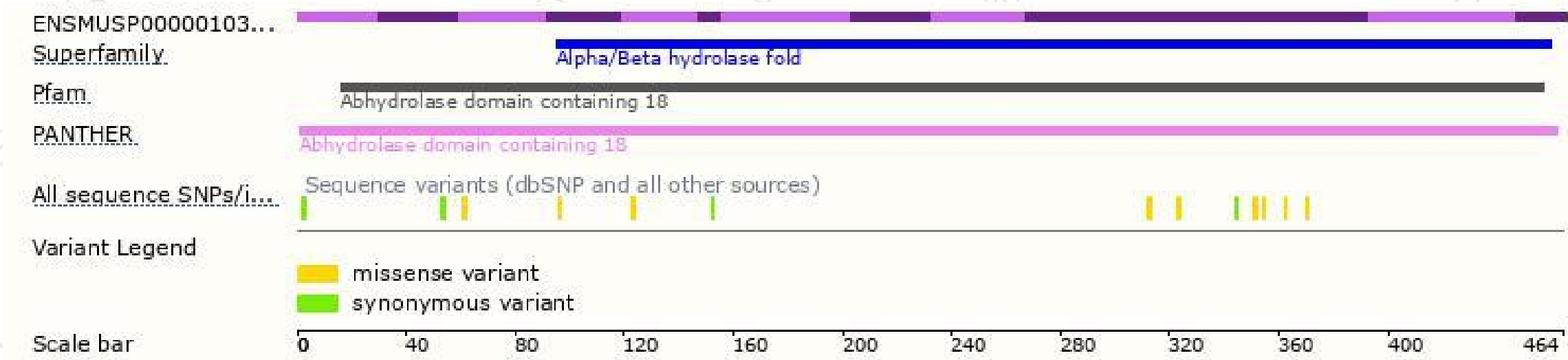
The strategy is based on the design of *Abhd18-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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