Abhd17a Cas9-KO Strategy

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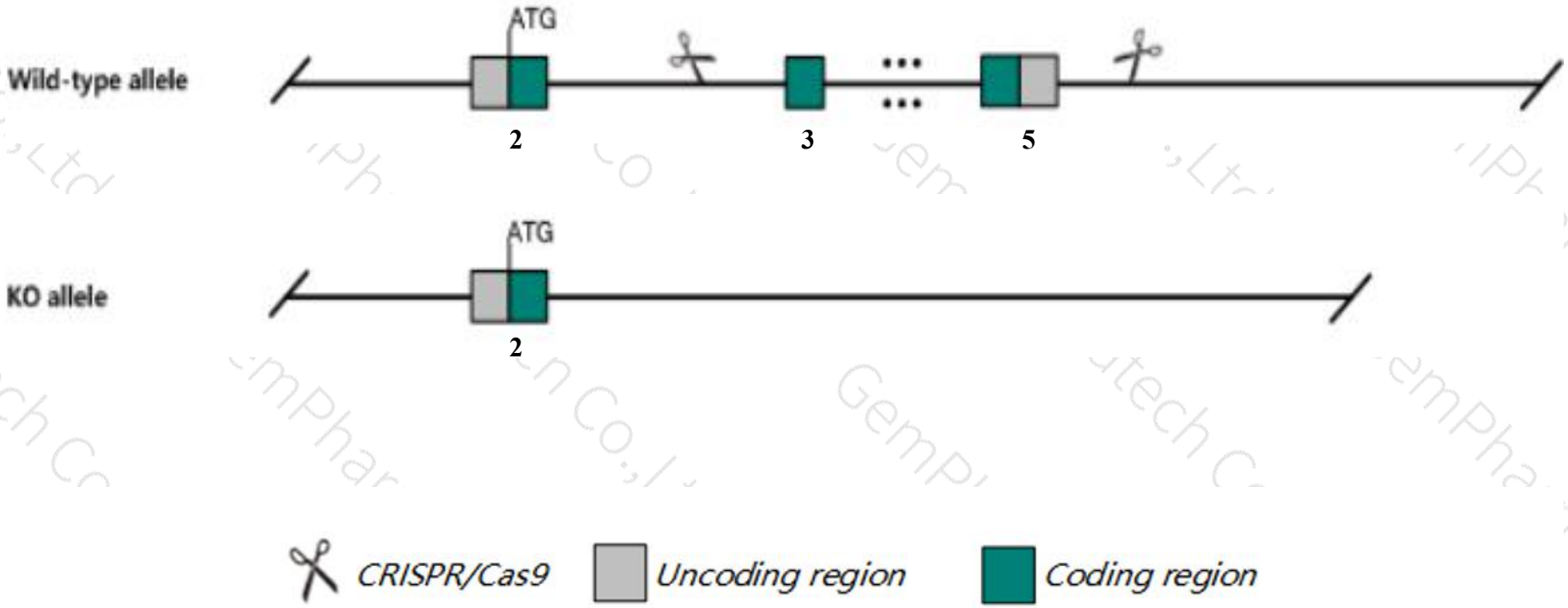
Project Overview

Project Name	***Abhd17a***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Abhd17a* gene. The schematic diagram is as follows:



Technical routes

➢ The *Abhd17a* gene has 4 transcripts. According to the structure of *Abhd17a* gene, exon3-exon5 of *Abhd17a-201* (ENSMUST00000003436.11) transcript is recommended as the knockout region.The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Abhd17a* gene. The brief process is as follows: CRISPR/Cas9 system w

Notice

- The knockout region is near to the N-terminal of *Klf16* gene,this strategy may influence the regulatory function of the N-terminal of *Klf16* gene.
- The *Abhd17a* gene is located on the Chr10. 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）

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Abhd17a abhydrolase domain containing 17A [*Mus musculus* (house mouse)]

Gene ID: 216169, updated on 12-Aug-2019

Summary

Official Symbol	Abhd17a provided by MGI
Official Full Name	abhydrolase domain containing 17A provided by MGI
Primary source	MGI:MGI:106388
See related	Ensembl:ENSMUSG00000003346
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	Fam108a; BC005632; D10Bwg1364e; 1700013O15Rik
Expression	Ubiquitous expression in duodenum adult (RPKM 251.7), adrenal adult (RPKM 194.1) and 28 other tissues See more
Orthologs	human all

Genomic context

Location: 10 C1; 10 39.72 cM

See Abhd17a in Genome Data Viewer

Exon count: 5

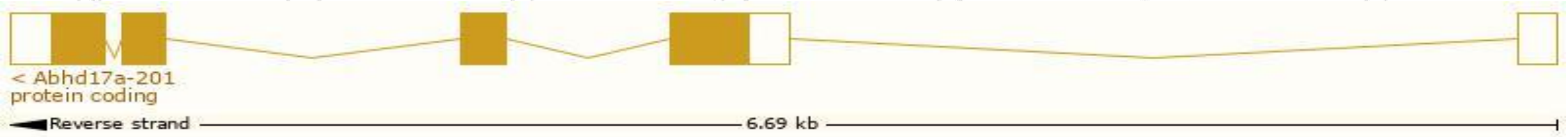
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	10	NC_000076.6 (80583649..80590341, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	10	NC_000076.5 (80046394..80053086, complement)

Transcript information（Ensembl）

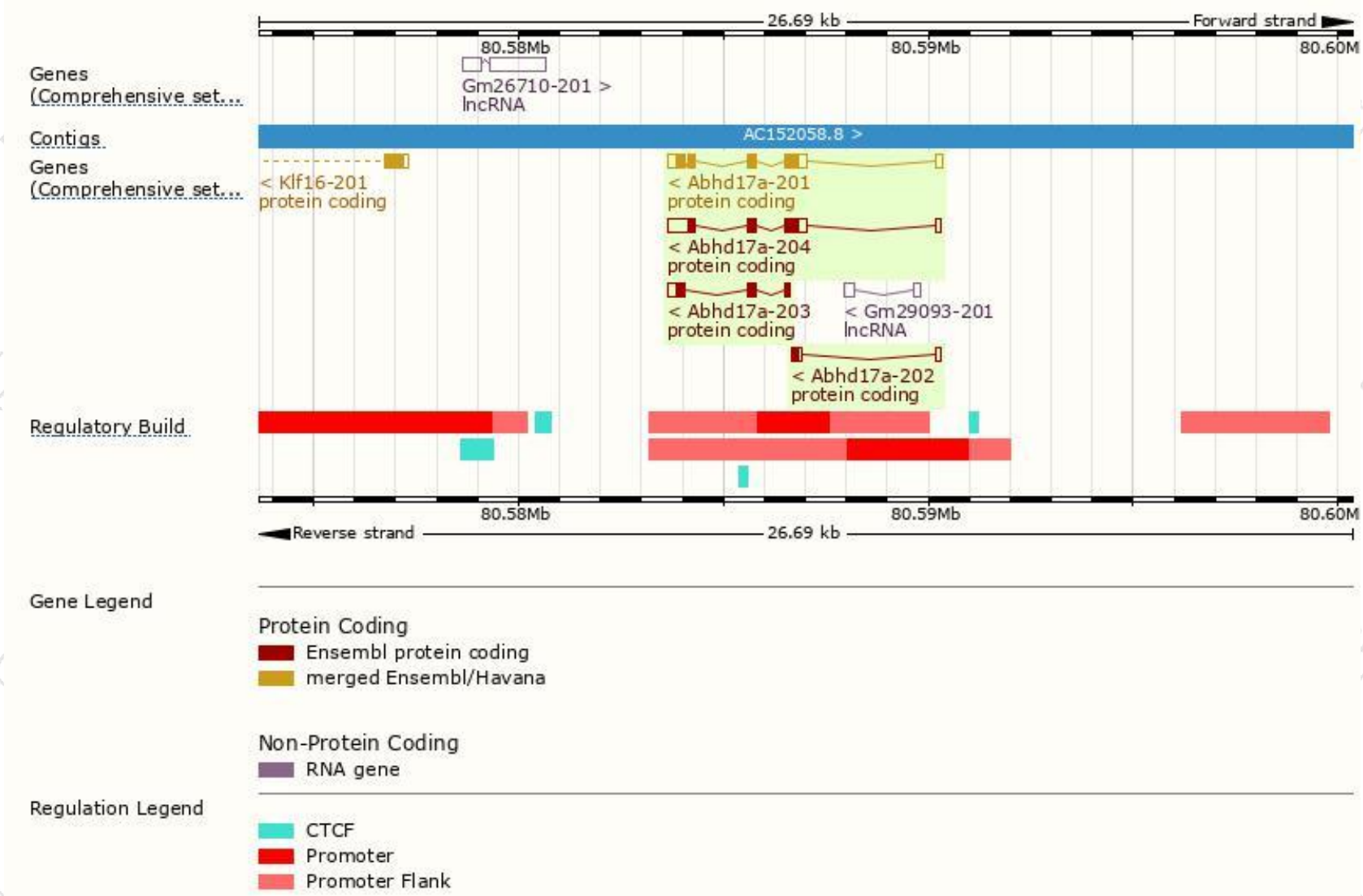
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Abhd17a-201	ENSMUST00000003436.11	1468	310aa	Protein coding	CCDS24027	Q99JW1	TSL:1 GENCODE basic APPRIS P1
Abhd17a-204	ENSMUST00000191440.6	1529	236aa	Protein coding	-	A0A087WPG3	TSL:1 GENCODE basic
Abhd17a-203	ENSMUST00000189605.1	713	176aa	Protein coding	-	A0A087WST3	CDS 5' incomplete TSL:3
Abhd17a-202	ENSMUST00000187646.1	392	56aa	Protein coding	-	A0A087WR09	CDS 3' incomplete TSL:5

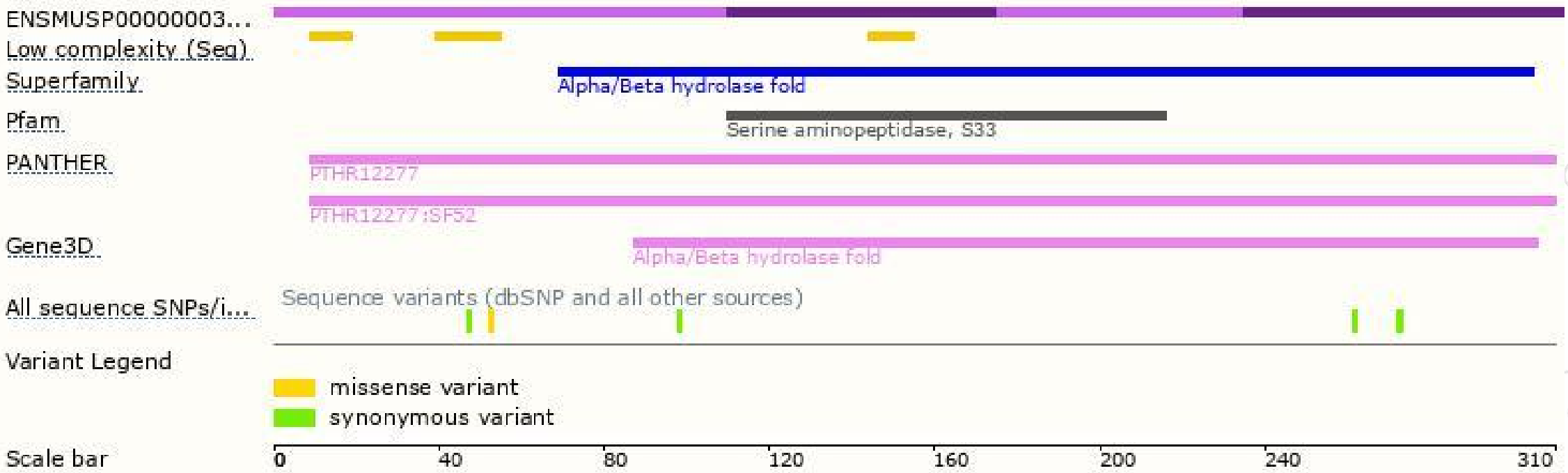
The strategy is based on the design of *Abhd17a-201* transcript,The transcription is shown below



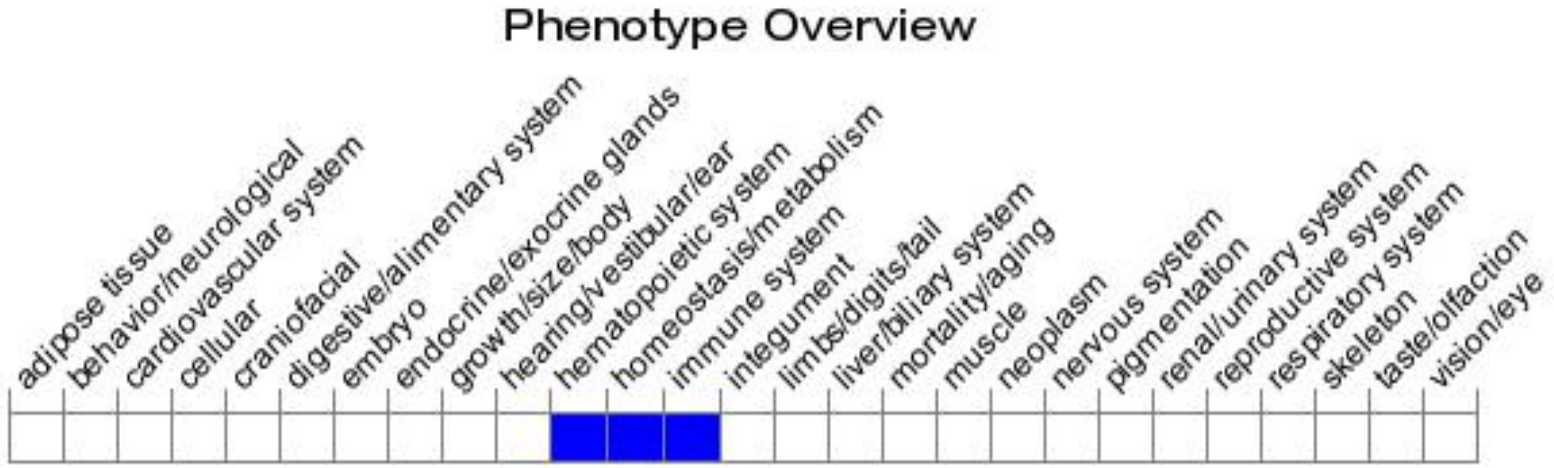
Genomic location distribution



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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