

Ephx4 Cas9-KO Strategy

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Project Overview

Project Name

Ephx4

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ephx4* gene. The schematic diagram is as follows:



- The *Ephx4* gene has 4 transcripts. According to the structure of *Ephx4* gene, exon3-exon5 of *Ephx4-201* (ENSMUST00000049146.11) transcript is recommended as the knockout region. The region contains 391bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ephx4* gene. The brief process is as follows: CRISPR/Cas9 system v

- *Gm17202* gene will be destroyed.
- The *Ephx4* gene is located on the Chr5. 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)

Ephx4 epoxide hydrolase 4 [*Mus musculus* (house mouse)]

Gene ID: 384214, updated on 12-Aug-2019

Summary

Official Symbol Ephx4 provided by [MGI](#)
Official Full Name epoxide hydrolase 4 provided by [MGI](#)
Primary source [MGI:MGI:2686228](#)
See related [Ensembl:ENSMUSG00000033805](#)
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 Abhd7; Ephxrp; Gm1382
Expression Biased expression in cortex adult (RPKM 18.7), frontal lobe adult (RPKM 11.8) and 6 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: 5; 5 E5

See Ephx4 in [Genome Data Viewer](#)

Exon count: 8

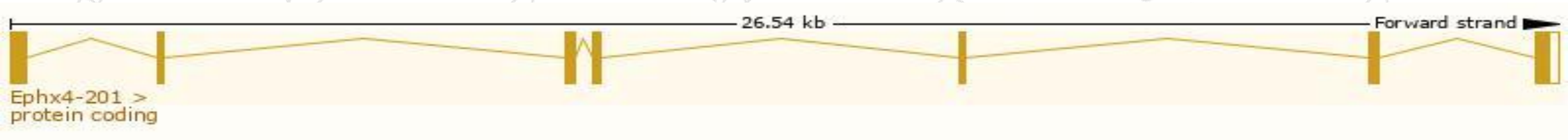
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	5	NC_000071.6 (107403133..107430035)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	5	NC_000071.5 (107832532..107859054)

Transcript information (Ensembl)

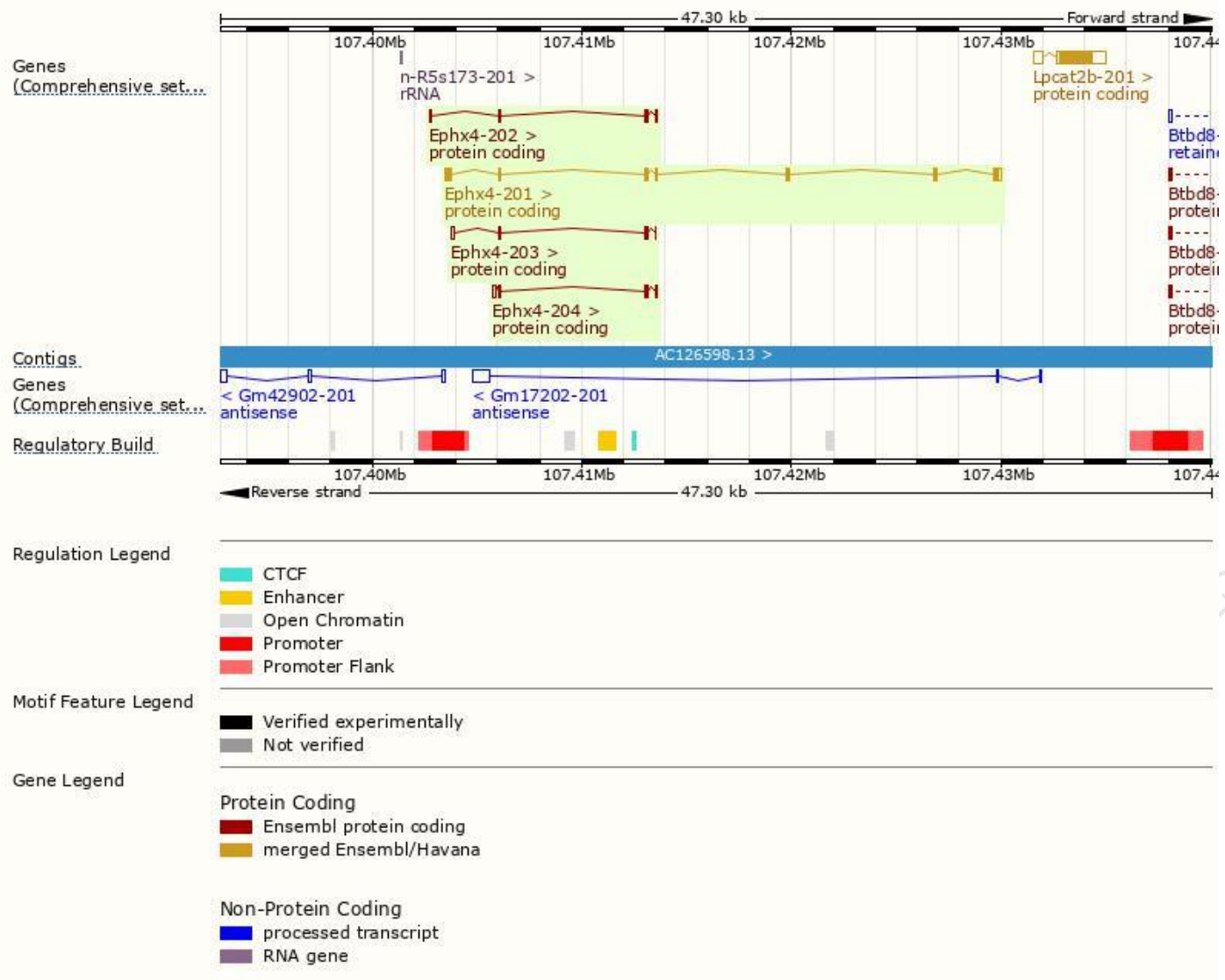
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ephx4-201	ENSMUST00000049146.11	1279	359aa	Protein coding	CCDS19501	Q6IE26	TSL:2 GENCODE basic APPRIS P1
Ephx4-202	ENSMUST00000159968.7	468	142aa	Protein coding	-	E0CXI7	CDS 3' incomplete TSL:3
Ephx4-203	ENSMUST00000161246.7	453	73aa	Protein coding	-	F6URA2	CDS 3' incomplete TSL:3
Ephx4-204	ENSMUST00000161452.1	424	93aa	Protein coding	-	E0CXW5	CDS 3' incomplete TSL:2

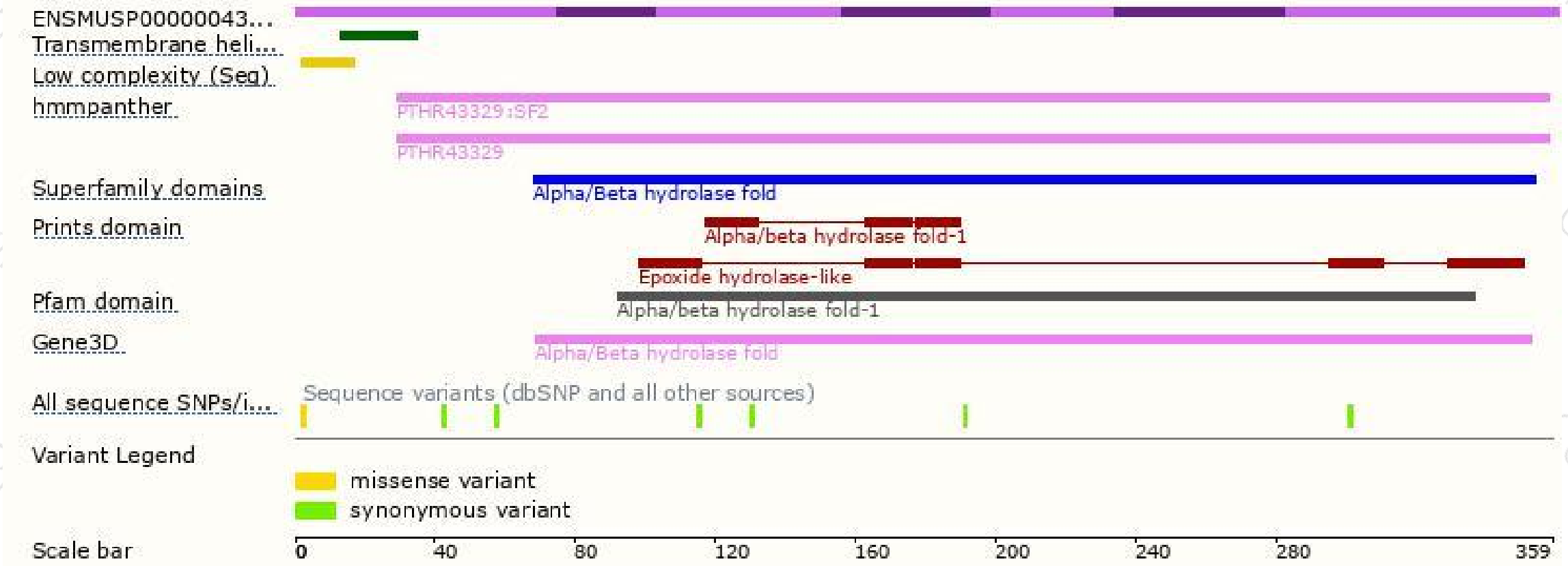
The strategy is based on the design of *Ephx4-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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