

Epha8 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Epha8

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Epha8* gene. The schematic diagram is as follows:



- The *Epha8* gene has 1 transcript. According to the structure of *Epha8* gene, exon2 of *Epha8-201* (ENSMUST00000030420.8) transcript is recommended as the knockout region. The region contains 65bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Epha8* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for this targeted mutation are viable, fertile, and grossly normal but exhibit a commissural defect, whereby tectal axons fail to project from the superior colliculus of the midbrain to the contralateral inferior colliculus and instead project to the ipsilateral cervical spinal cord.
- The *Epha8* gene is located on the Chr4. 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)

Epha8 Eph receptor A8 [Mus musculus (house mouse)]

Gene ID: 13842, updated on 31-Jan-2019

Summary



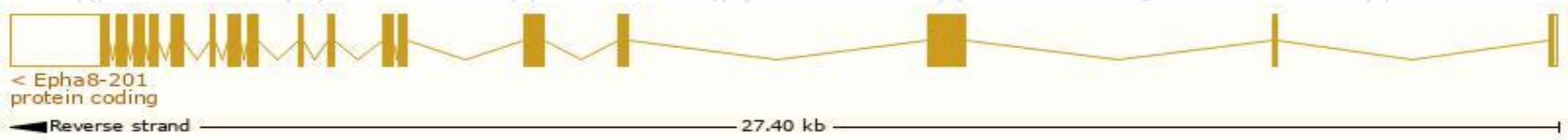
Official Symbol	Epha8 provided by MGI
Official Full Name	Eph receptor A8 provided by MGI
Primary source	MGI:MGI:109378
See related	Ensembl:ENSMUSG00000028661
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW047546, Eek, Hek3, mKIAA1459
Expression	Biased expression in cerebellum adult (RPKM 13.1), CNS E18 (RPKM 11.1) and 8 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

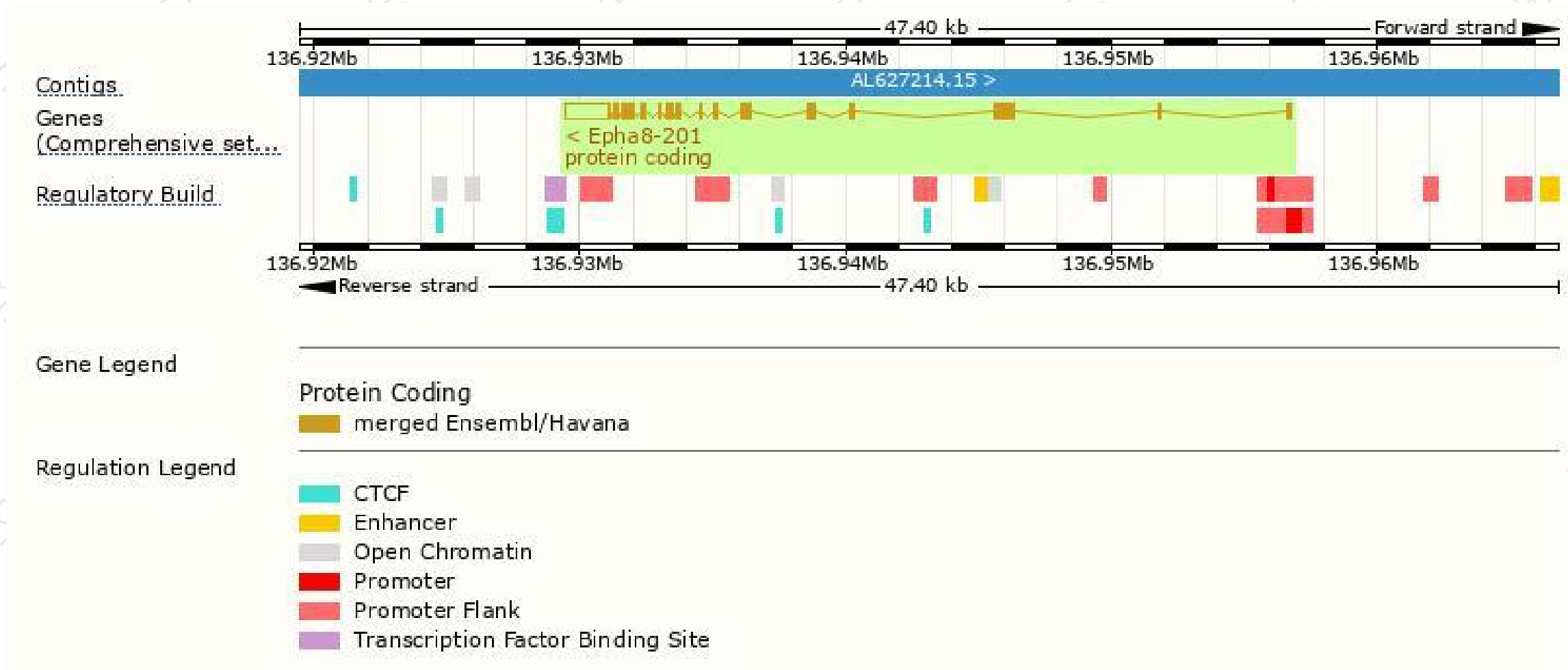
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Epha8-201	ENSMUST00000030420.8	4713	1004aa	Protein coding	CCDS18813	O09127	TSL:1 Gencode basic APPRIS P1

The strategy is based on the design of *Epha8-201* transcript, The transcription is shown below



Genomic location distribution

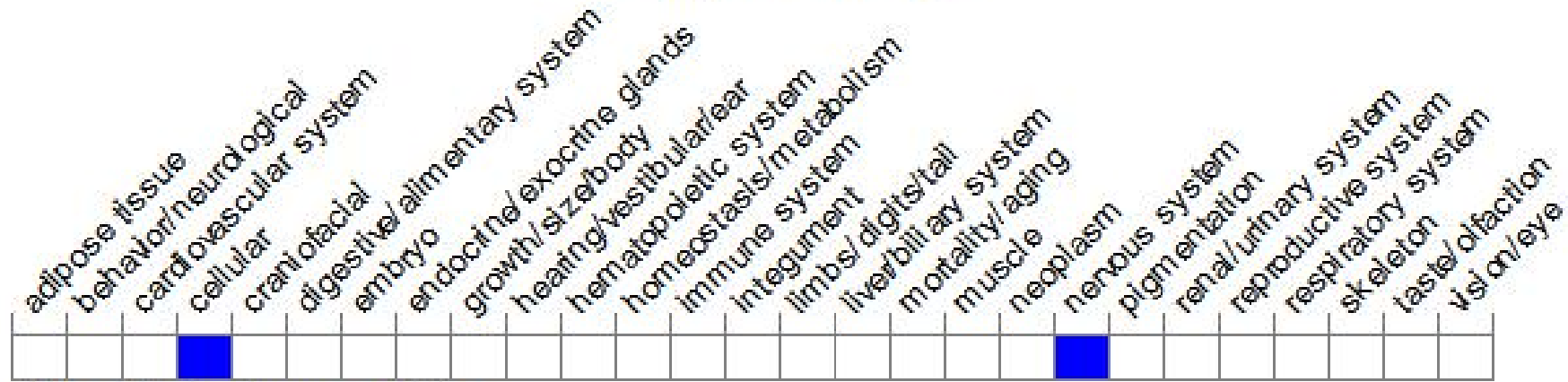


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview ?



Click cells to view annotations.

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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