

Elavl2 Cas9-CKO Strategy

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Project Overview

Project Name

Elavl2

Project type

Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Elavl2* gene. The schematic diagram is as follows:

The *Elavl2* gene has 16 transcripts. According to the structure of *Elavl2* gene, exon2-exon3 of *Elavl2*-208 (ENSMUST00000107120.7) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Elavl2* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.

The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

The *Elavl2* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Elavl2 ELAV like RNA binding protein 1 [Mus musculus (house mouse)]

Gene ID: 15569, updated on 31-Jan-2019

Summary



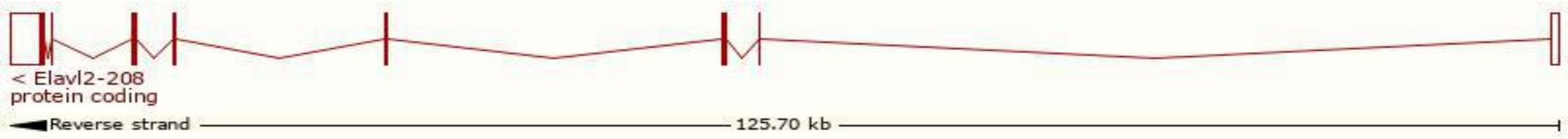
Official Symbol	Elavl2 provided by MGI
Official Full Name	ELAV like RNA binding protein 1 provided by MGI
Primary source	MGI:MGI:1100887
See related	Ensembl:ENSMUSG00000008489
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Hub, mel-N1
Expression	Biased expression in whole brain E14.5 (RPKM 12.9), CNS E18 (RPKM 11.4) and 5 other tissues See more
Orthologs	human all

Transcript information Ensembl

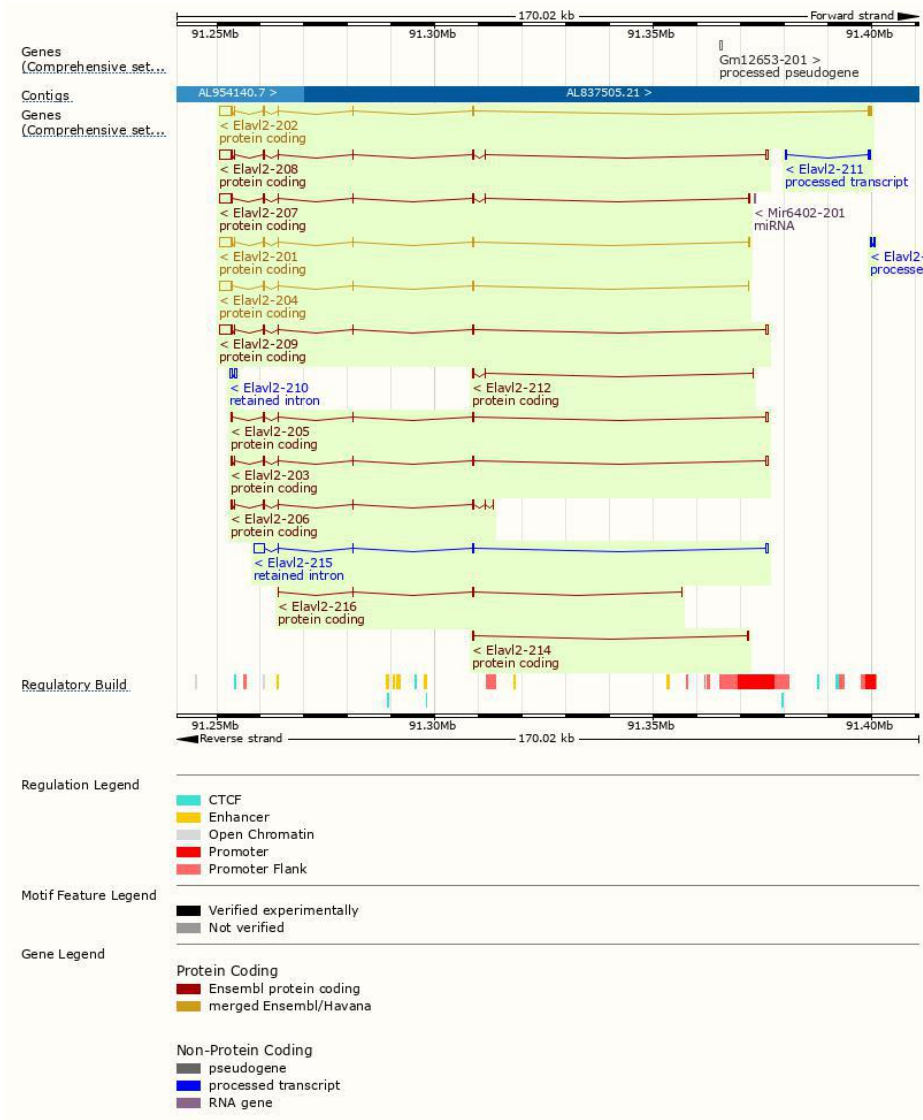
The gene has 16 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Elavl2-208	ENSMUST00000107120.7	4191	388aa	Protein coding	CCDS84753	B1AXZ4	TSL:5 GENCODE basic APPRIS ALT 1
Elavl2-209	ENSMUST00000107124.9	4127	359aa	Protein coding	CCDS51230	Q3UR02	TSL:1 GENCODE basic APPRIS ALT 1
Elavl2-202	ENSMUST00000102799.9	3840	373aa	Protein coding	CCDS18354	Q80Y51	TSL:1 GENCODE basic APPRIS P4
Elavl2-201	ENSMUST00000008633.14	3730	360aa	Protein coding	CCDS18355	Q564D8 Q60899	TSL:1 GENCODE basic APPRIS ALT 1
Elavl2-204	ENSMUST00000107110.7	3671	347aa	Protein coding	CCDS18356	Q80UJ0	TSL:1 GENCODE basic
Elavl2-203	ENSMUST00000107109.8	1591	359aa	Protein coding	CCDS51230	Q3UR02	TSL:5 GENCODE basic APPRIS ALT 1
Elavl2-207	ENSMUST00000107118.7	3797	376aa	Protein coding	-	B1AXZ6	TSL:5 GENCODE basic APPRIS ALT 1
Elavl2-205	ENSMUST00000107111.8	1552	346aa	Protein coding	-	B1AXZ0	TSL:5 GENCODE basic
Elavl2-206	ENSMUST00000107116.8	1282	389aa	Protein coding	-	B1AXZ5	TSL:5 GENCODE basic APPRIS ALT 1
Elavl2-214	ENSMUST00000176362.1	511	23aa	Protein coding	-	H3BJL9	CDS 3' incomplete TSL:3
Elavl2-216	ENSMUST00000177109.1	425	125aa	Protein coding	-	H3BLG7	CDS 3' incomplete TSL:3
Elavl2-212	ENSMUST00000147611.1	408	83aa	Protein coding	-	B1AXZ3	CDS 3' incomplete TSL:3
Elavl2-211	ENSMUST00000144769.1	450	No protein	Processed transcript	-	-	TSL:3
Elavl2-213	ENSMUST00000176151.1	415	No protein	Processed transcript	-	-	TSL:3
Elavl2-215	ENSMUST00000176469.1	3195	No protein	Retained intron	-	-	TSL:1
Elavl2-210	ENSMUST00000128599.1	930	No protein	Retained intron	-	-	TSL:3

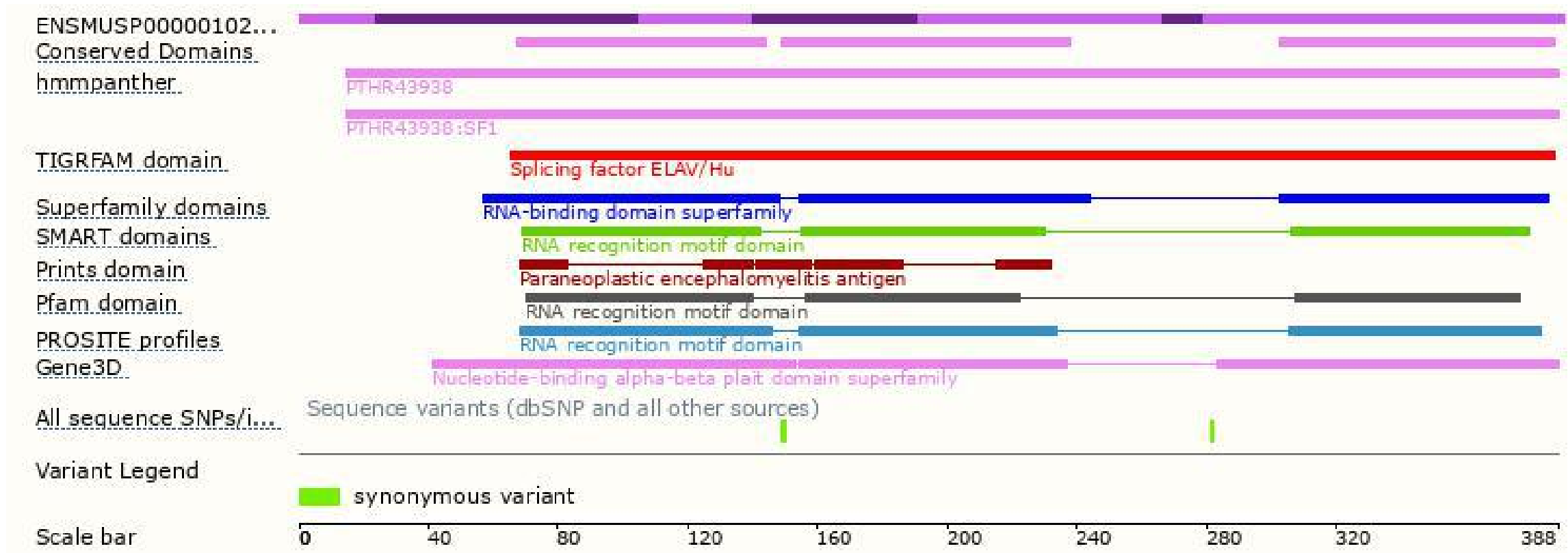
The strategy is based on the design of *Elavl2-208* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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