

Eif3a Cas9-CKO Strategy

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Project Overview

Project Name

Eif3a

Project type

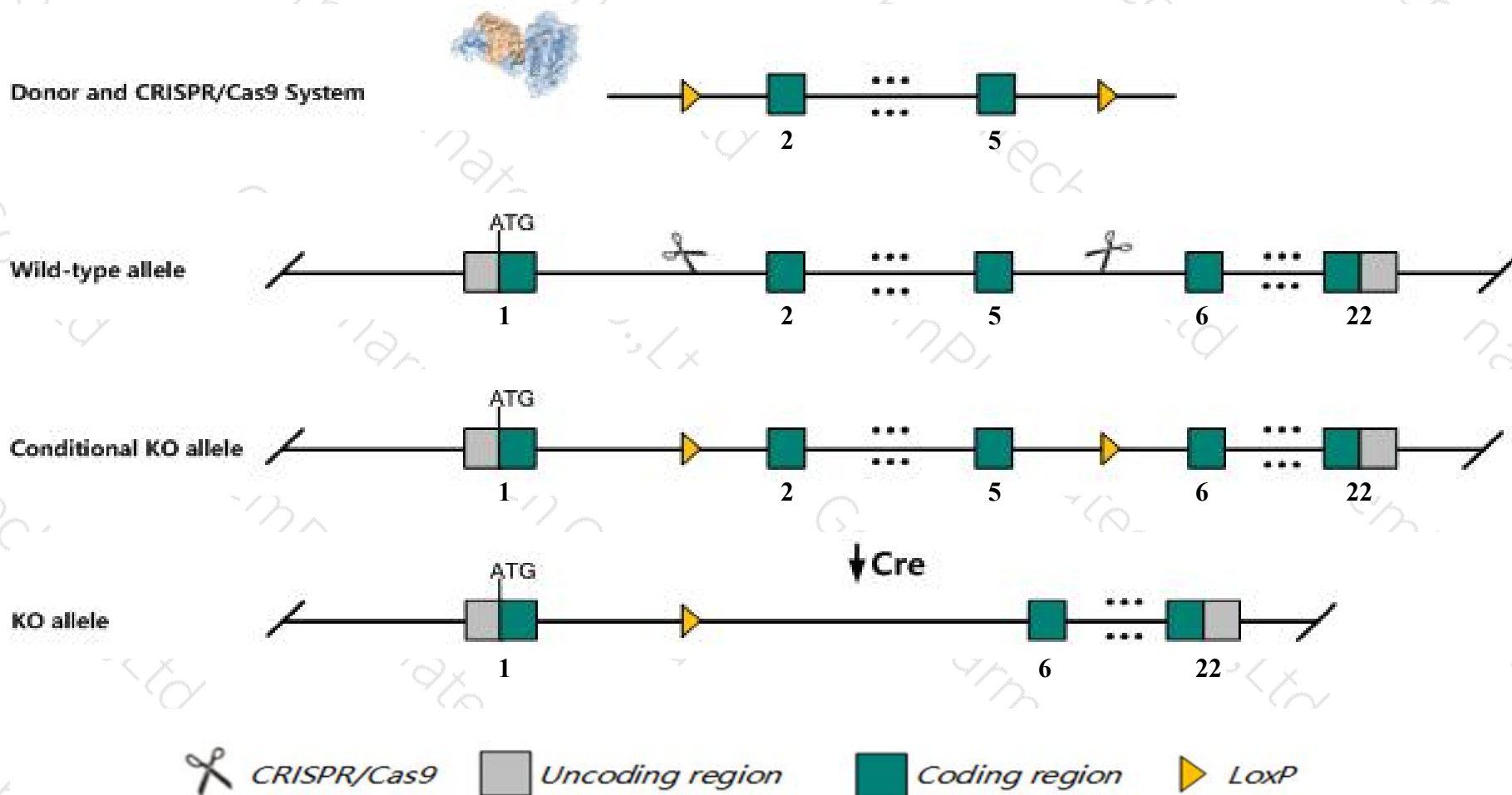
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Eif3a* gene. The schematic diagram is as follows:



- The *Eif3a* gene has 5 transcripts. According to the structure of *Eif3a* gene, exon2-exon5 of *Eif3a-201* (ENSMUST00000025955.7) transcript is recommended as the knockout region. The region contains 692bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Eif3a* 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.

Notice

- The *Eif3a* gene is located on the Chr19. 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.

Gene information (NCBI)

Eif3a eukaryotic translation initiation factor 3, subunit A [Mus musculus (house mouse)]

Gene ID: 13669, updated on 31-Jan-2019

Summary



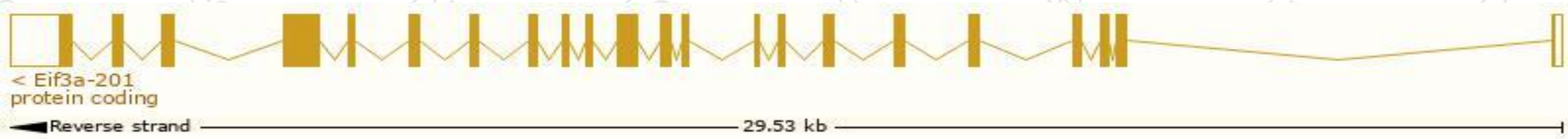
Official Symbol	Eif3a provided by MGI
Official Full Name	eukaryotic translation initiation factor 3, subunit A provided by MGI
Primary source	MGI:MGI:95301
See related	Ensembl:ENSMUSG00000024991
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A830012B05Rik, Csma, Eif3, Eif3s10, mKIAA0139
Expression	Broad expression in CNS E11.5 (RPKM 81.9), liver E14 (RPKM 47.8) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

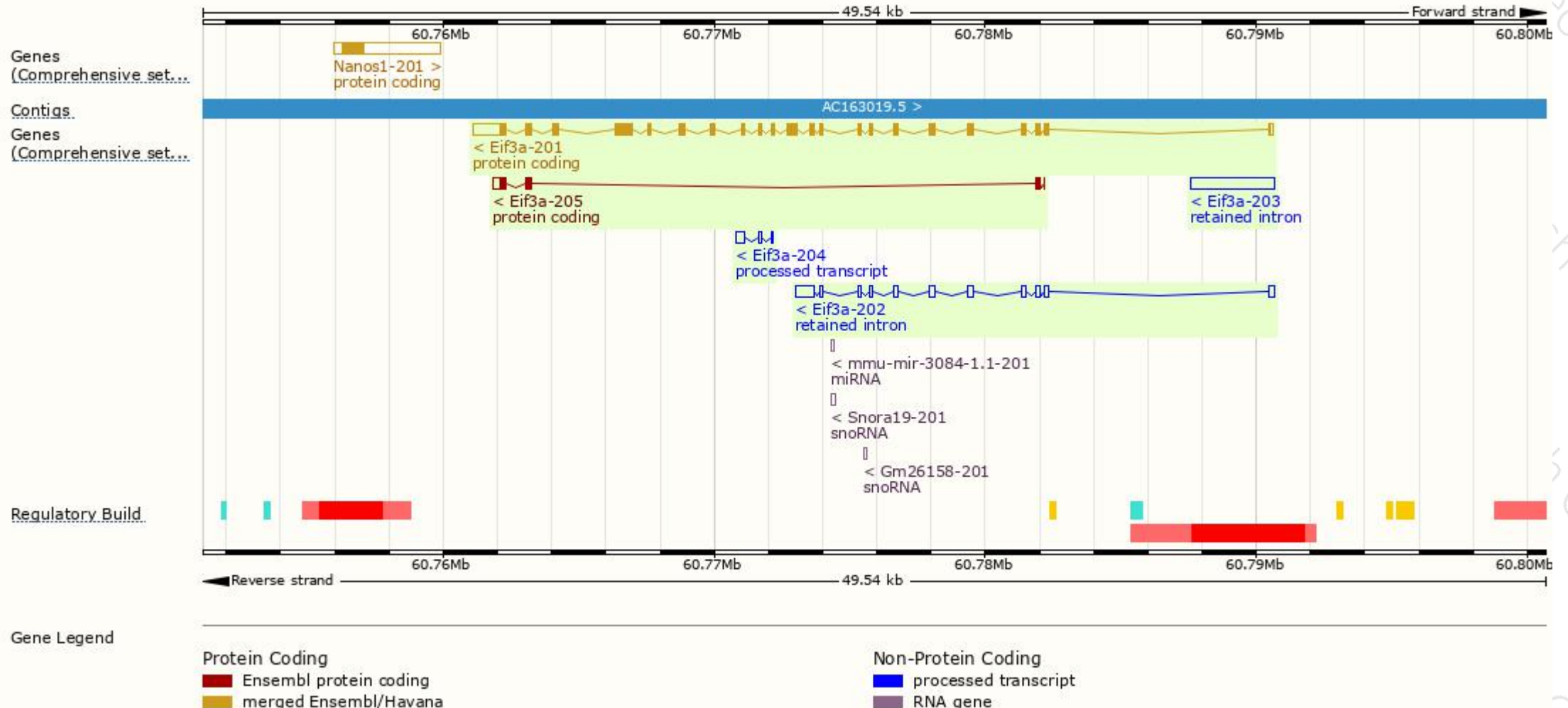
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Eif3a-201	ENSMUST00000025955.7	5125	1344aa	Protein coding	CCDS38035	P23116	TSL:1 GENCODE basic APPRIS P1
Eif3a-205	ENSMUST00000238125.1	826	194aa	Protein coding	-	-	CDS 5' incomplete
Eif3a-204	ENSMUST00000237319.1	525	No protein	Processed transcript	-	-	
Eif3a-203	ENSMUST00000236622.1	3085	No protein	Retained intron	-	-	
Eif3a-202	ENSMUST00000235706.1	2282	No protein	Retained intron	-	-	

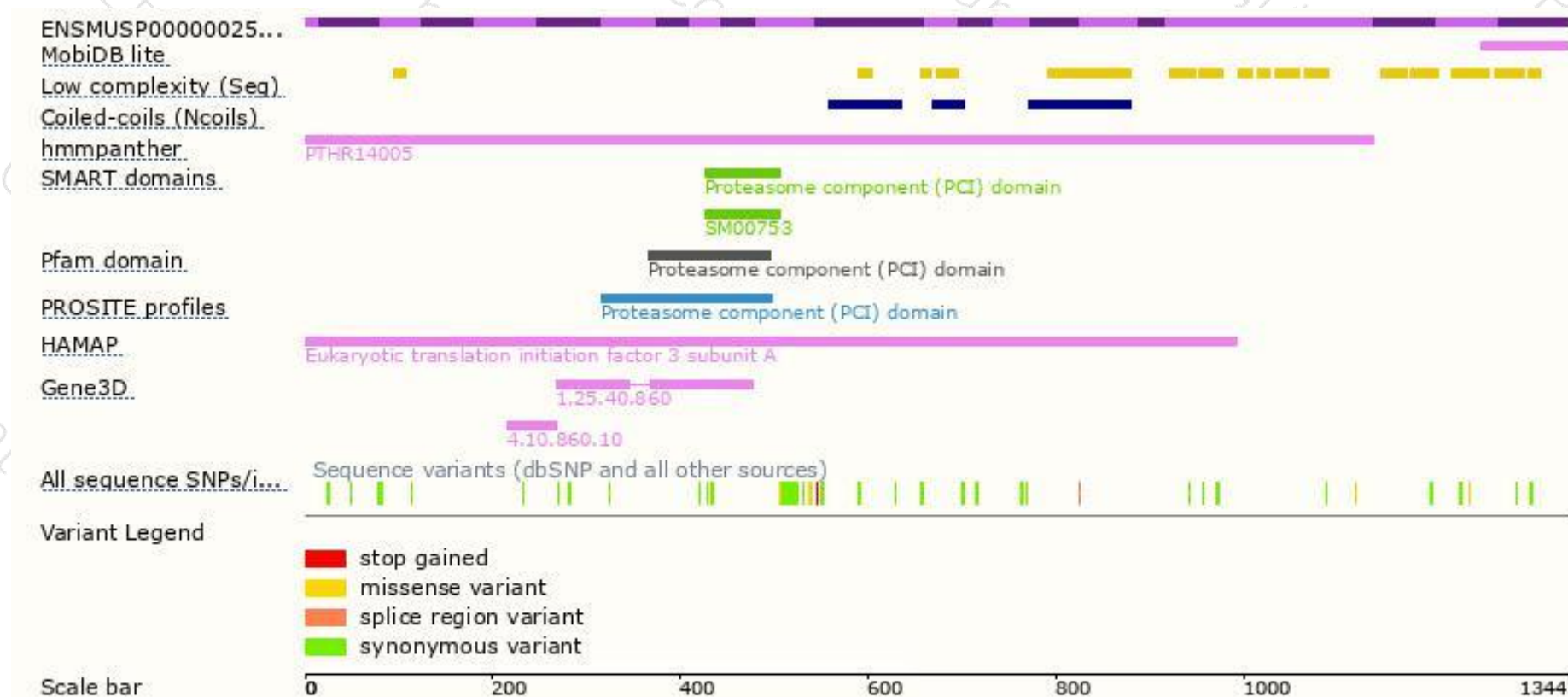
The strategy is based on the design of *Eif3a-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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