

Magohb Cas9-CKO Strategy

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Project Overview

Project Name

Magohb

Project type

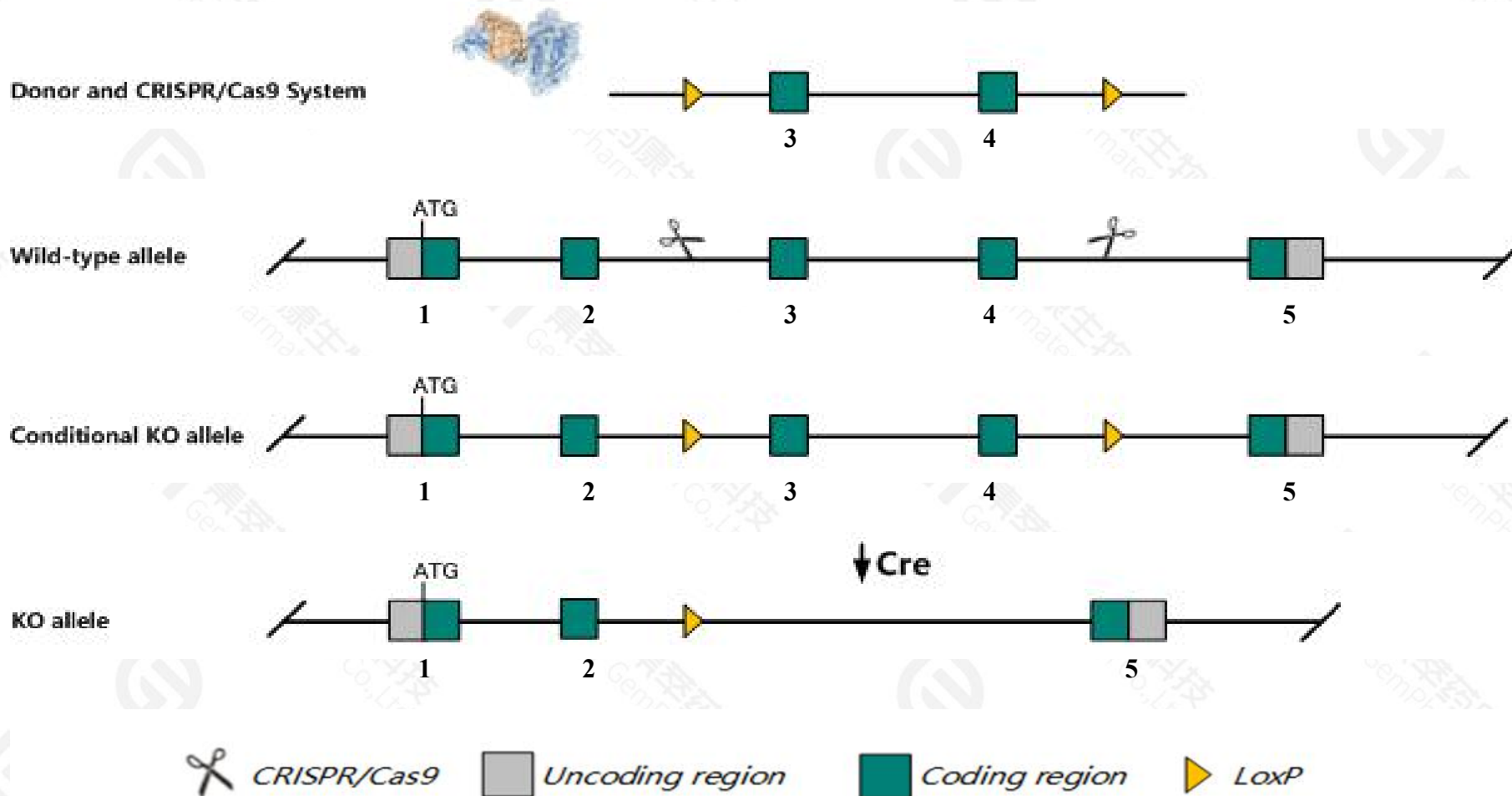
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- The *Magohb* gene has 7 transcripts. According to the structure of *Magohb* gene, exon3-exon4 of *Magohb*-201(ENSMUST00000032307.12) transcript is recommended as the knockout region. The region contains 194bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Magohb* 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 *Magohb* gene is located on the Chr6. 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)

Magohb mago homolog B, exon junction complex core component [Mus musculus (house mouse)]

Gene ID: 66441, updated on 29-Jan-2021

Summary



Official Symbol Magohb provided by [MGI](#)

Official Full Name mago homolog B, exon junction complex core component provided by [MGI](#)

Primary source [MGI:MGI:1913691](#)

See related [Ensembl:ENSMUSG00000030188](#)

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 2010012C16Rik, Mago, Magoh, Magoh-rs1

Expression Broad expression in CNS E11.5 (RPKM 7.8), liver E14 (RPKM 7.0) and 17 other tissues [See more](#)

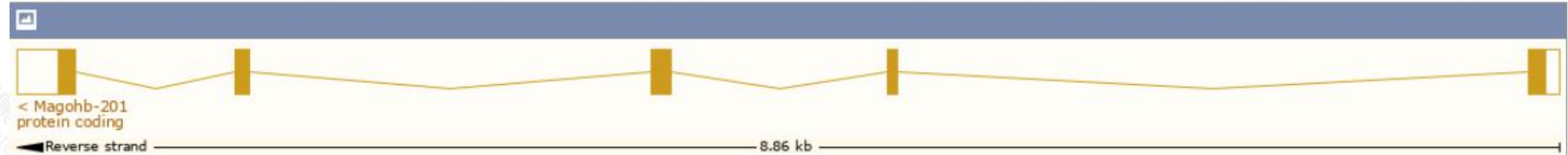
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

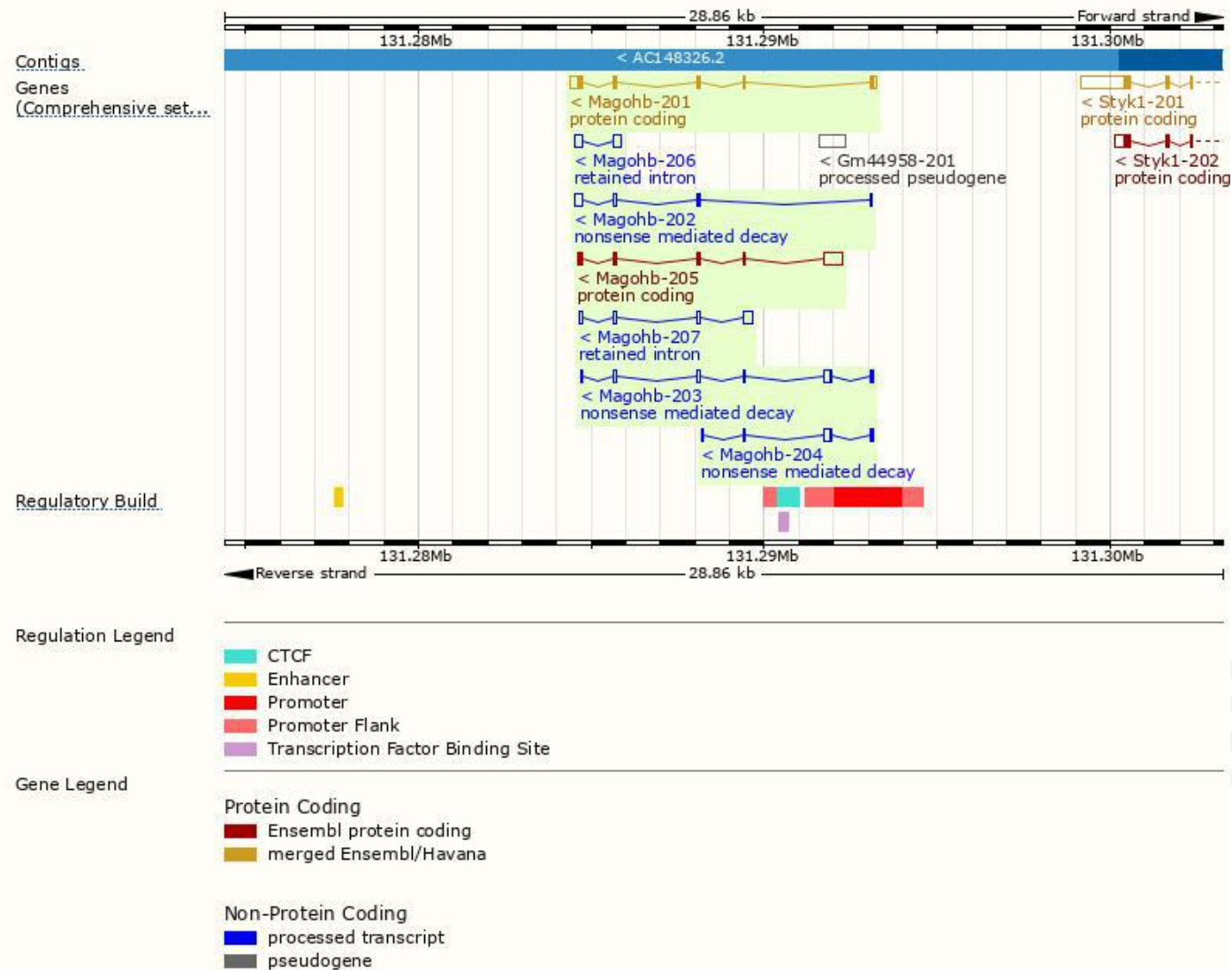
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Magohb-205	ENSMUST00000173837.6	897	102aa	Protein coding	CCDS85172		TSL:5 , GENCODE basic ,
Magohb-201	ENSMUST00000032307.12	767	148aa	Protein coding	CCDS39670		TSL:1 , GENCODE basic , APPRIS P1 ,
Magohb-203	ENSMUST00000173198.8	561	44aa	Nonsense mediated decay	-		CDS 5' incomplete , TSL:5 ,
Magohb-202	ENSMUST00000172883.8	460	35aa	Nonsense mediated decay	-		CDS 5' incomplete , TSL:5 ,
Magohb-204	ENSMUST00000173332.2	395	44aa	Nonsense mediated decay	-		CDS 5' incomplete , TSL:5 ,
Magohb-207	ENSMUST00000174781.4	546	No protein	Retained intron	-		TSL:2 ,
Magohb-206	ENSMUST00000174488.2	447	No protein	Retained intron	-		TSL:2 ,

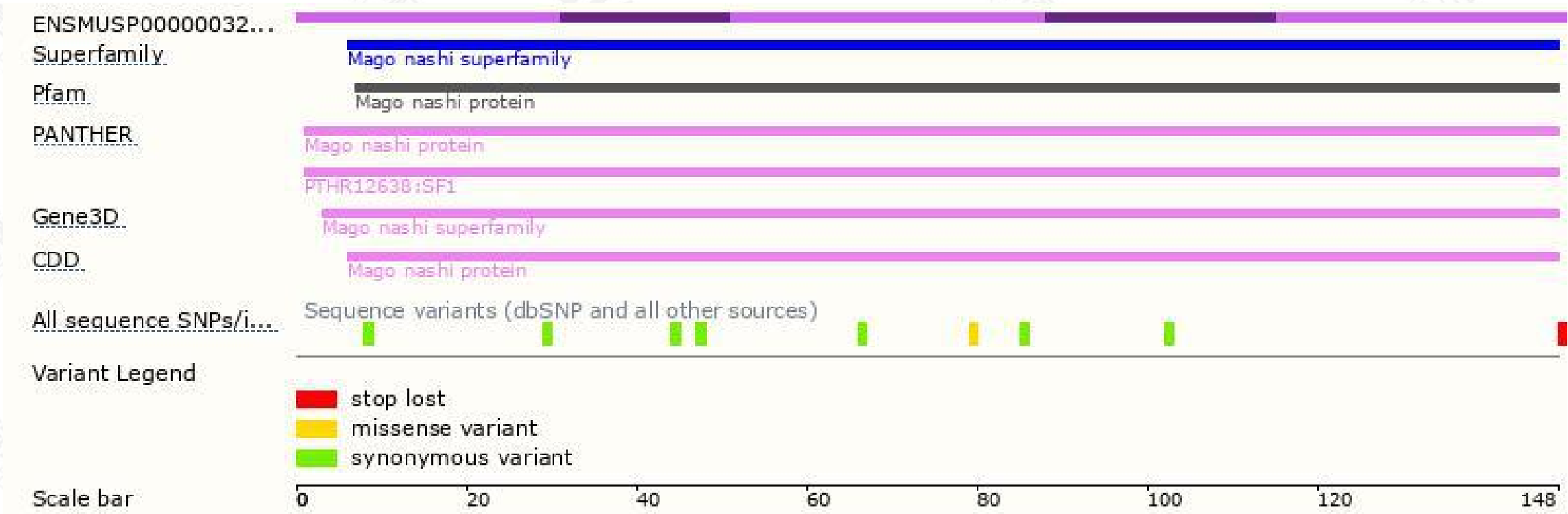
The strategy is based on the design of *Magohb-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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