

Hmgxb4 Cas9-KO Strategy

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Project Overview

Project Name

Hmgxb4

Project type

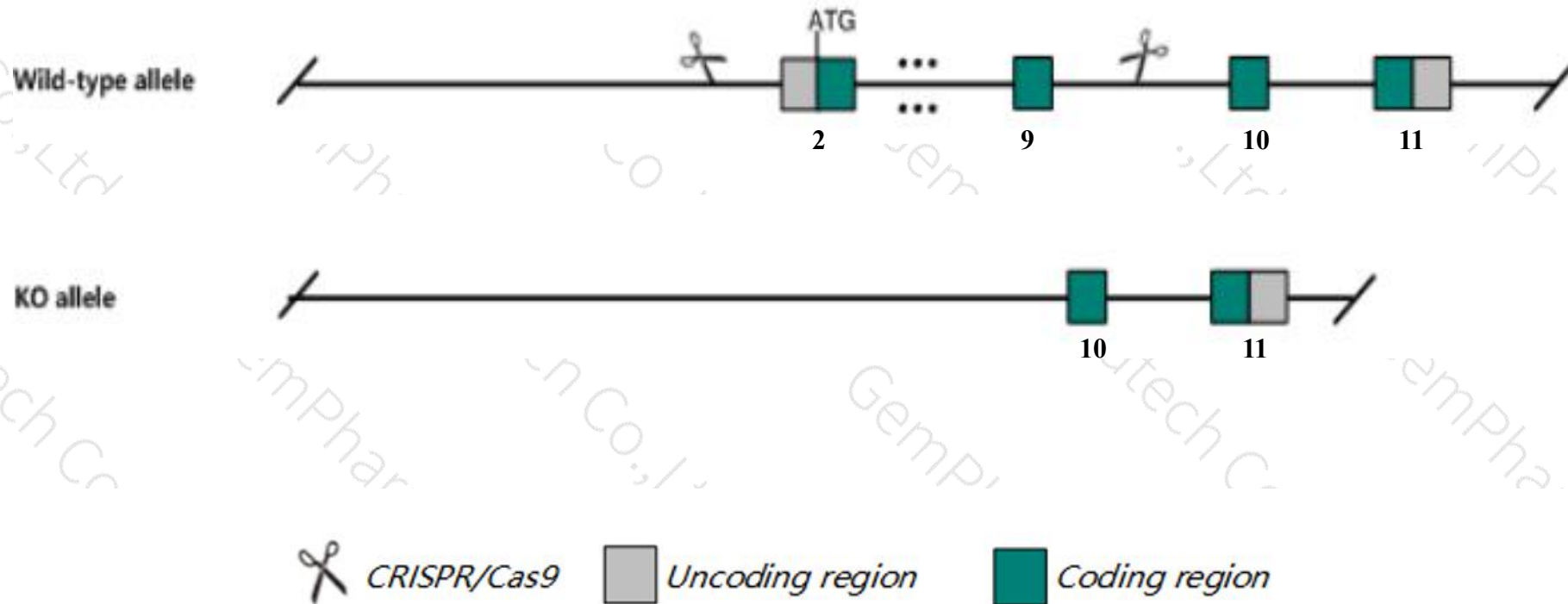
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Hmgxb4* gene. The schematic diagram is as follows:



- The *Hmgxb4* gene has 9 transcripts. According to the structure of *Hmgxb4* gene, exon2-exon9 of *Hmgxb4*-201(ENSMUST00000041759.13) 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 *Hmgxb4* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Hmgxb4* gene is located on the Chr8. 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)

Hmgxb4 HMG box domain containing 4 [Mus musculus (house mouse)]

Gene ID: 70823, updated on 13-Mar-2020

Summary



Official Symbol	Hmgxb4 provided by MGI
Official Full Name	HMG box domain containing 4 provided by MGI
Primary source	MGI:MGI:1918073
See related	Ensembl:ENSMUSG00000034518
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	4733401K04Rik, AI316803, Hmgb2l1
Expression	Ubiquitous expression in CNS E11.5 (RPKM 9.5), limb E14.5 (RPKM 8.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

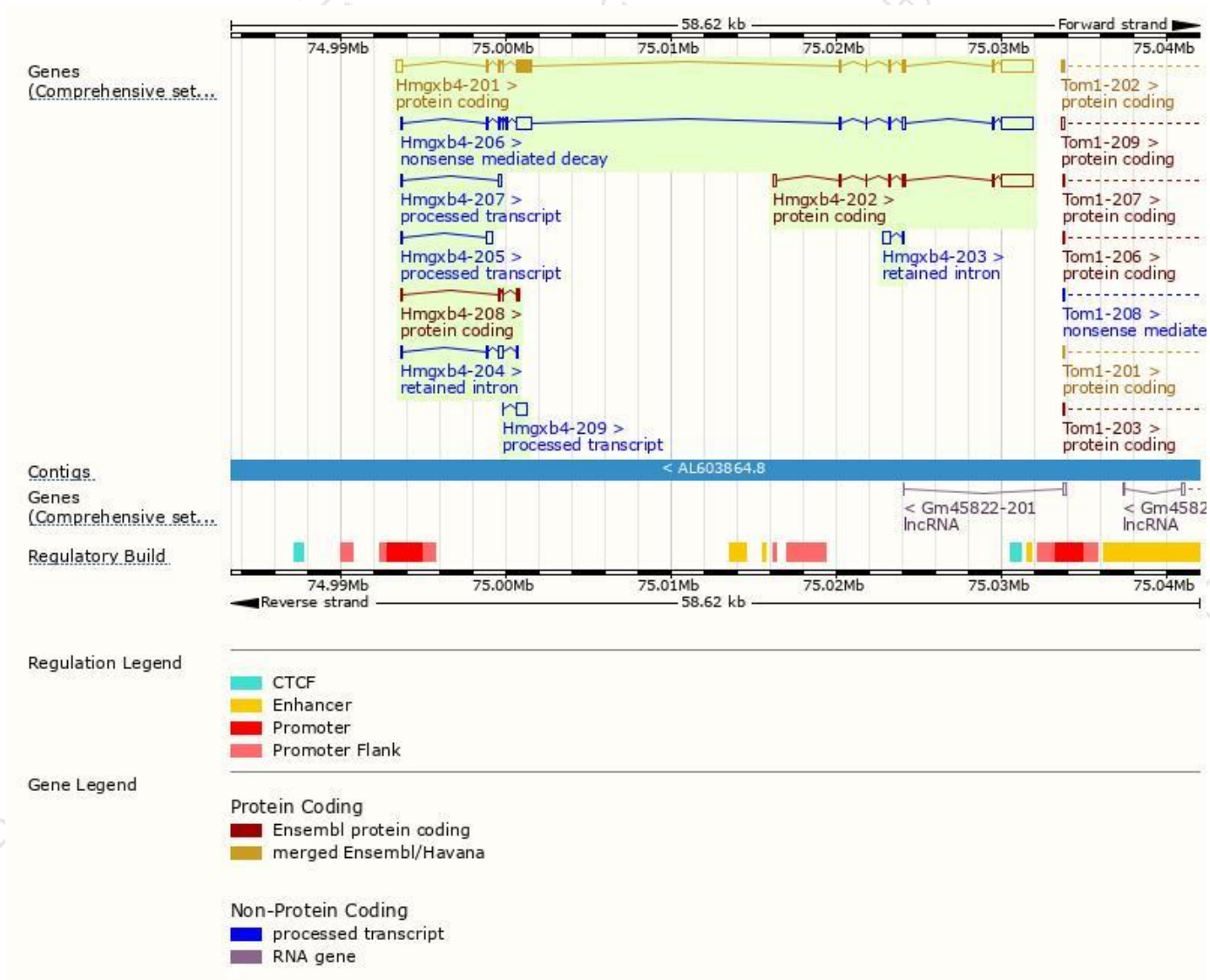
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hmgxb4-201	ENSMUST00000041759.13	4191	594aa	Protein coding	CCDS22422	Q80Y32	TSL:1 GENCODE basic APPRIS P1
Hmgxb4-202	ENSMUST00000109940.1	2656	197aa	Protein coding	CCDS85564	Q8BTT5	TSL:1 GENCODE basic
Hmgxb4-208	ENSMUST00000211863.1	512	53aa	Protein coding	-	A0A1D5RLZ2	CDS 3' incomplete TSL:2
Hmgxb4-206	ENSMUST00000145919.1	3989	92aa	Nonsense mediated decay	-	G3UX81	TSL:1
Hmgxb4-209	ENSMUST00000212372.1	682	No protein	Processed transcript	-	-	TSL:3
Hmgxb4-205	ENSMUST00000134126.1	445	No protein	Processed transcript	-	-	TSL:2
Hmgxb4-207	ENSMUST00000151062.7	310	No protein	Processed transcript	-	-	TSL:5
Hmgxb4-204	ENSMUST00000133585.1	609	No protein	Retained intron	-	-	TSL:3
Hmgxb4-203	ENSMUST00000129391.1	529	No protein	Retained intron	-	-	TSL:2

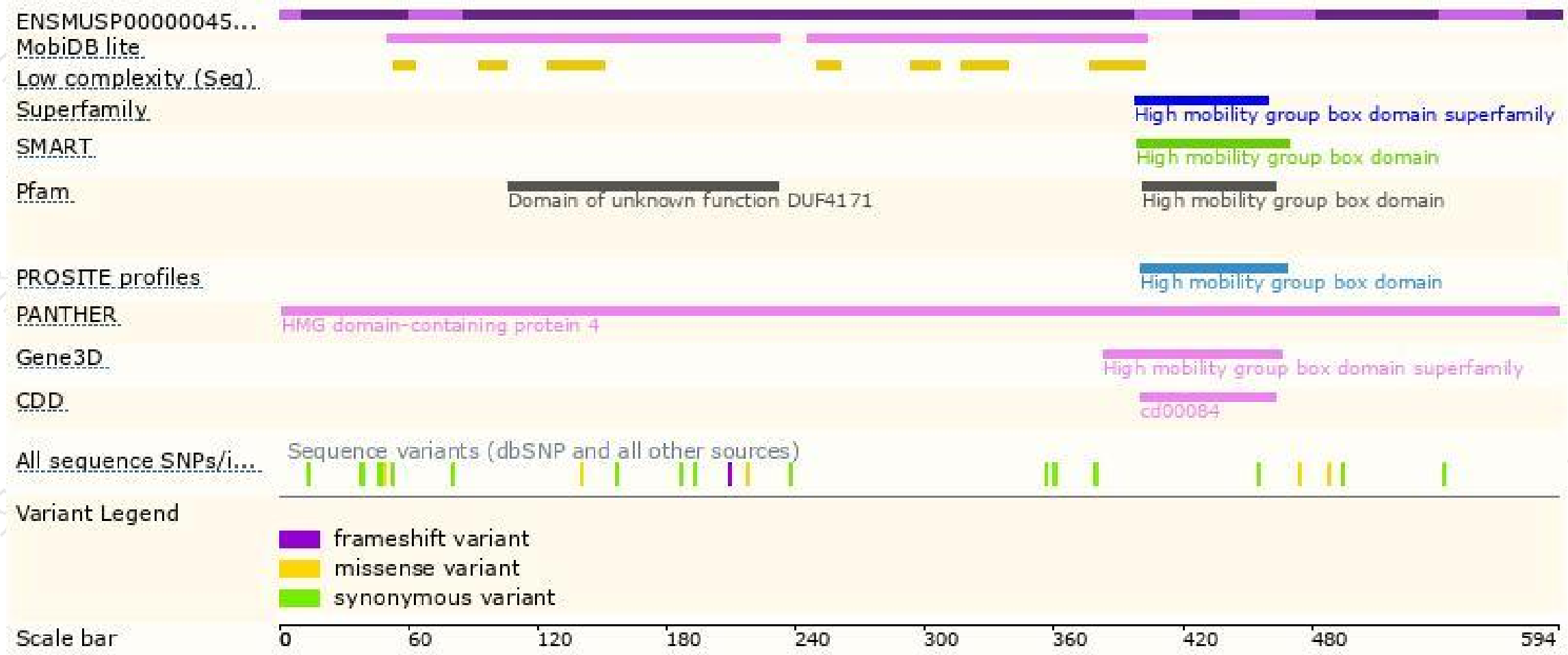
The strategy is based on the design of *Hmgxb4-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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