

Clpx Cas9-KO Strategy

Designer:

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Design Date:

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Project Overview

Project Name

Clpx

Project type

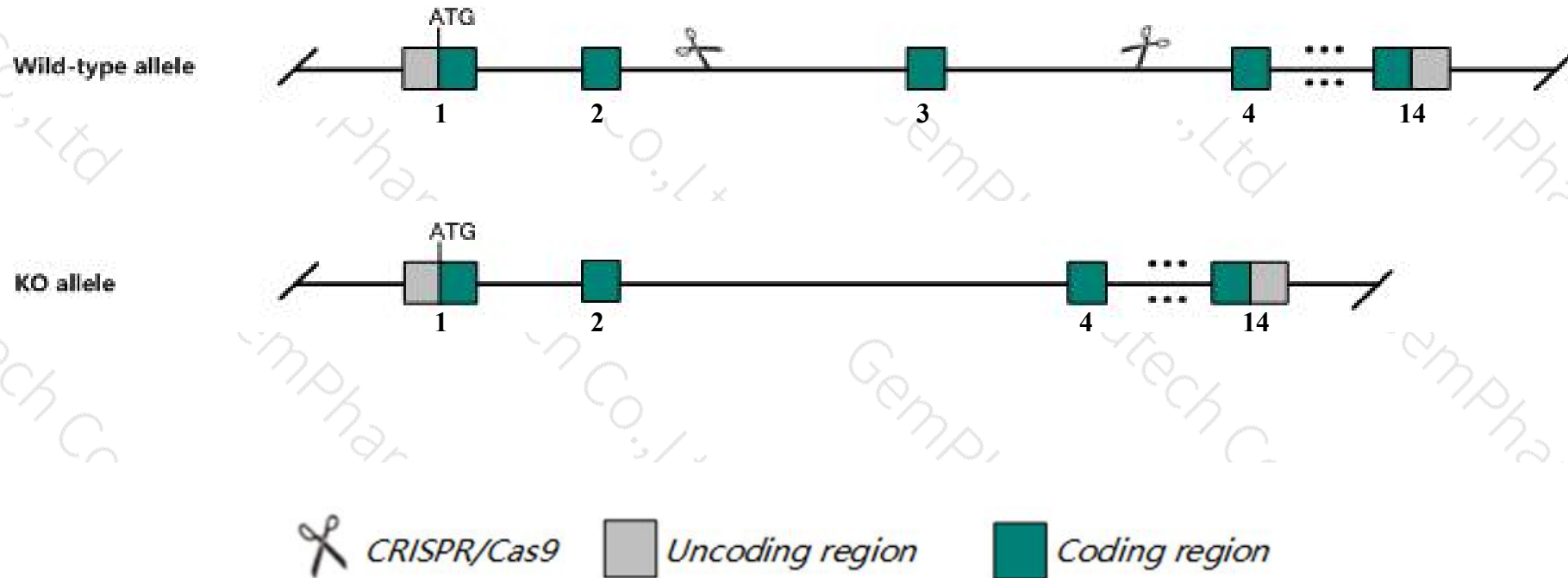
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Clpx* gene has 4 transcripts. According to the structure of *Clpx* gene, exon3 of *Clpx-201* (ENSMUST00000015501.10) transcript is recommended as the knockout region. The region contains 118bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Clpx* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Clpx* gene is located on the Chr9. 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)

Clpx caseinolytic mitochondrial matrix peptidase chaperone subunit [Mus musculus (house mouse)]

Gene ID: 270166, updated on 7-Apr-2019

Summary



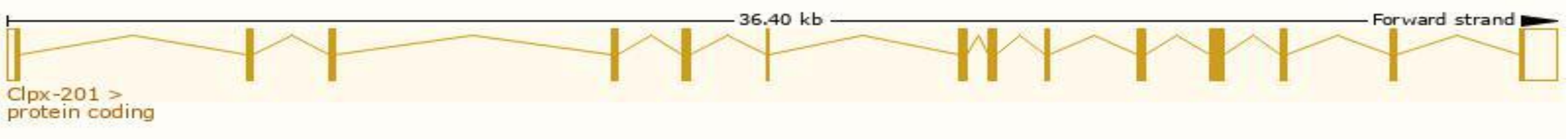
Official Symbol	Clpx provided by MGI
Official Full Name	caseinolytic mitochondrial matrix peptidase chaperone subunit provided by MGI
Primary source	MGI:MGI:1346017
See related	Ensembl:ENSMUSG00000015357
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AU014732, E330029I21
Expression	Ubiquitous expression in liver E18 (RPKM 23.0), testis adult (RPKM 18.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

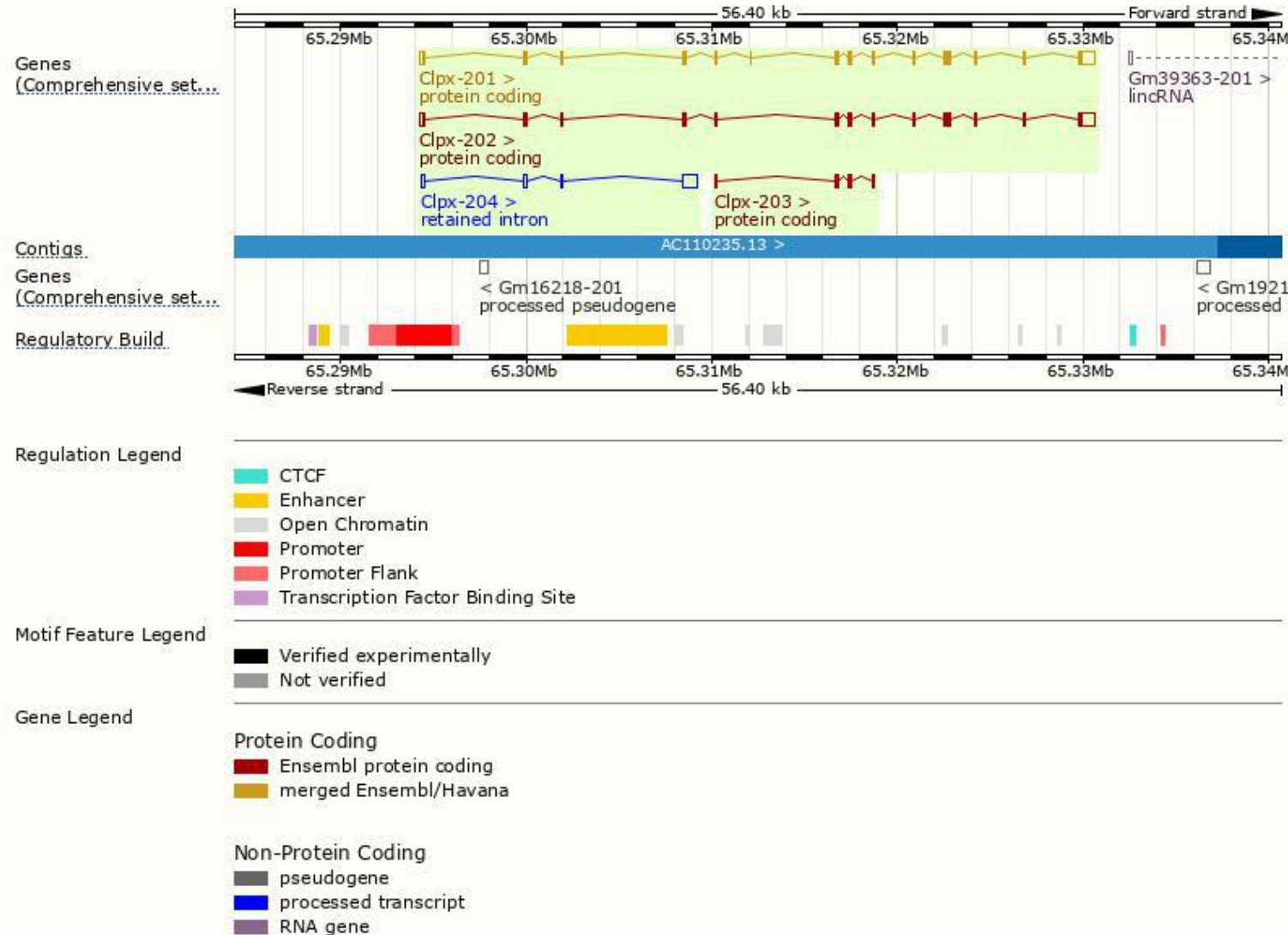
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Clpx-204	ENSMUST00000148632.1	1279	No protein	Retained intron	-	-	TSL:1
Clpx-203	ENSMUST00000147279.1	577	192aa	Protein coding	-	F7BB92	CDS 5' and 3' incomplete TSL:2
Clpx-202	ENSMUST00000113824.7	2809	620aa	Protein coding	CCDS40669	Q6P8N8	TSL:1 GENCODE basic APPRIS ALT1
Clpx-201	ENSMUST00000015501.10	2885	634aa	Protein coding	CCDS23288	Q9JHS4	TSL:1 GENCODE basic APPRIS P3

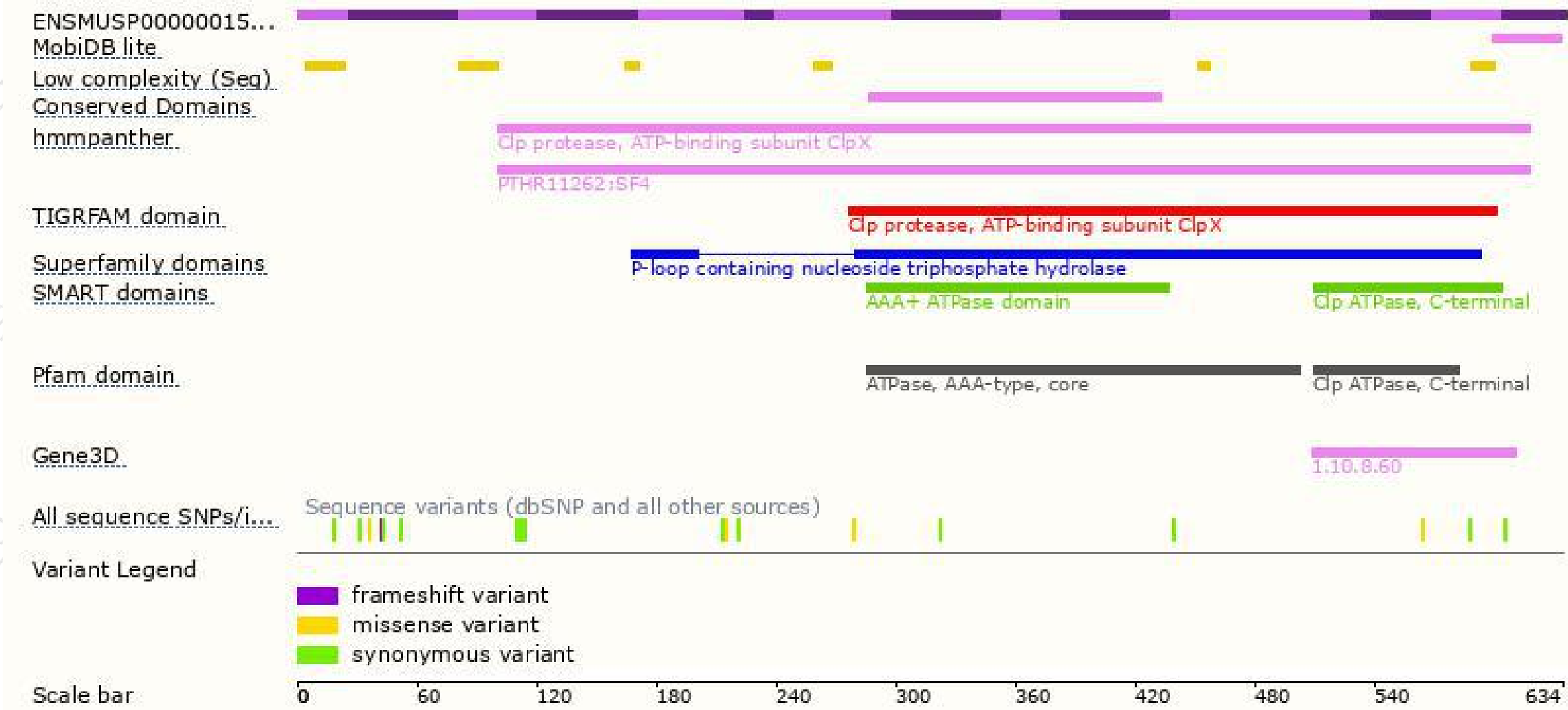
The strategy is based on the design of *Clpx-201* transcript,The transcription is shown below



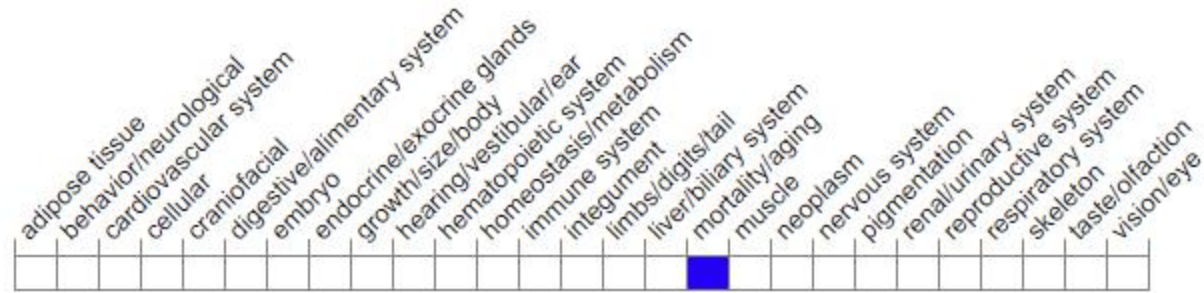
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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