

Cryba4 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Cryba4

Project type

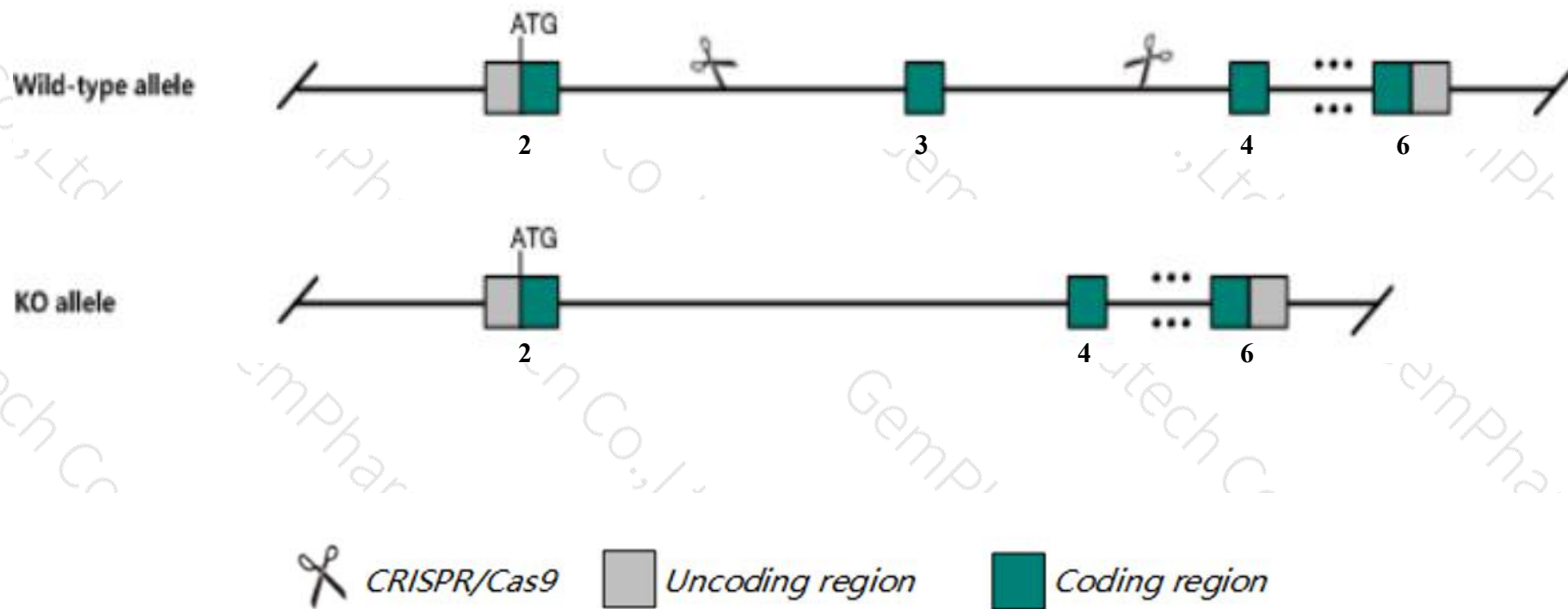
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cryba4* gene. The schematic diagram is as follows:



- The *Cryba4* gene has 3 transcripts. According to the structure of *Cryba4* gene, exon3 of *Cryba4-203* (ENSMUST00000112385.7) transcript is recommended as the knockout region. The region contains 119bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cryba4* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Cryba4* gene is located on the Chr5. 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)

Cryba4 crystallin, beta A4 [Mus musculus (house mouse)]

Gene ID: 12959, updated on 5-Mar-2019

Summary



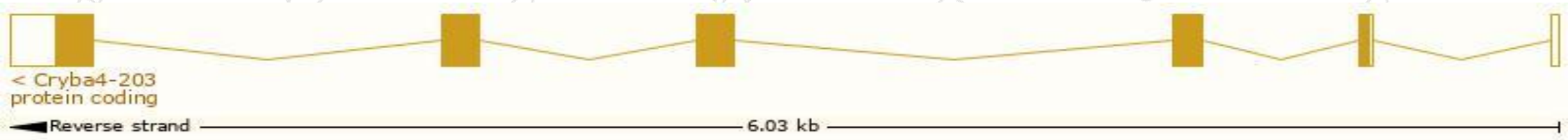
Official Symbol	Cryba4 provided by MGI
Official Full Name	crystallin, beta A4 provided by MGI
Primary source	MGI:MGI:102716
See related	Ensembl:ENSMUSG00000066975
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Summary	This gene encodes a member of the crystallin family of proteins that contribute to the transparency and refractive properties of the ocular lens. Certain mutations in the human ortholog of this gene are associated with cataract and bilateral microphthalmia. This gene is located adjacent to a related crystallin gene on chromosome 5. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Aug 2015]
Expression	Biased expression in genital fat pad adult (RPKM 82.6), adrenal adult (RPKM 22.3) and 2 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

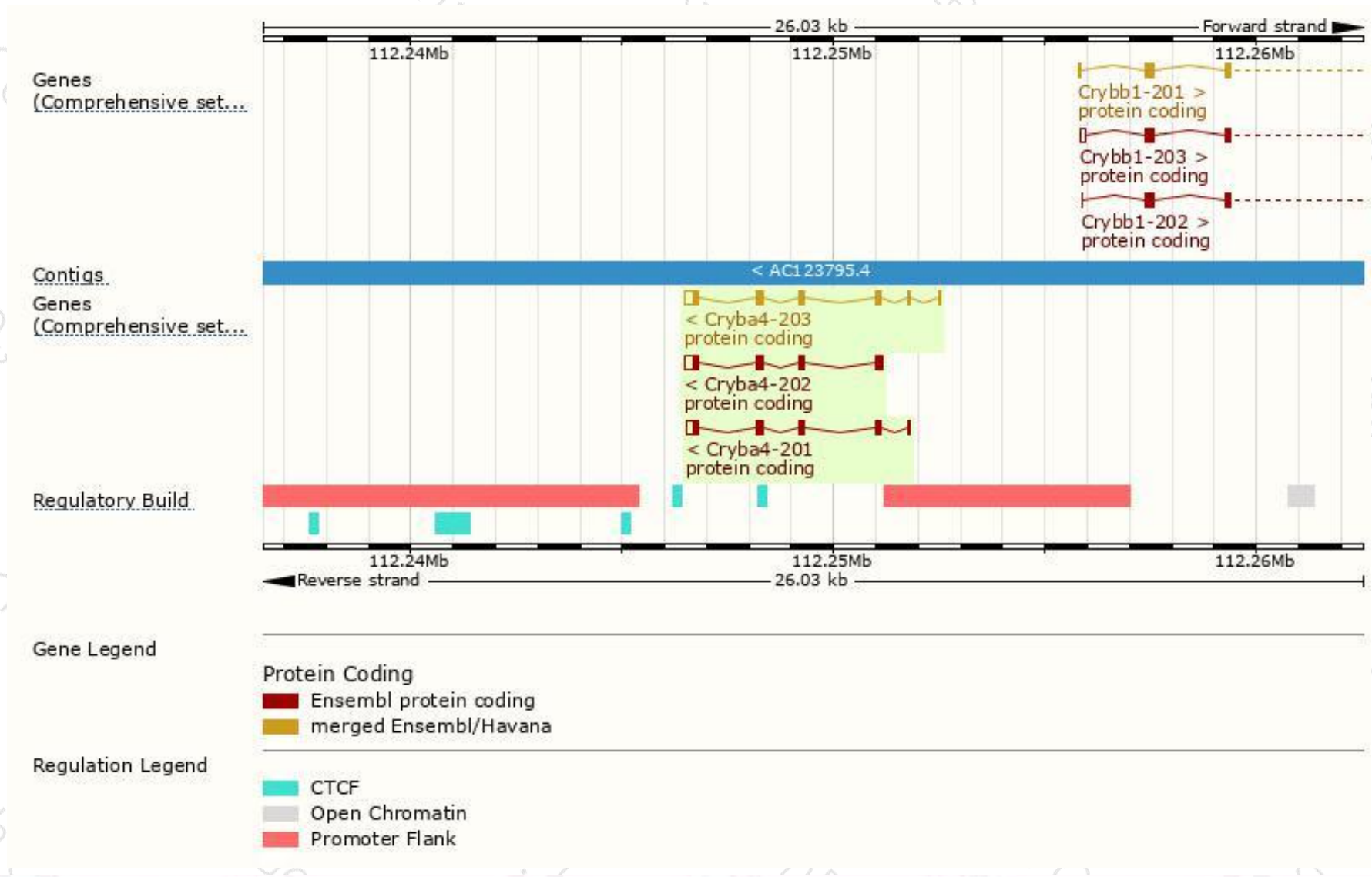
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cryba4-203	ENSMUST00000112385.7	808	196aa	Protein coding	CCDS19536	Q3V1A0 Q9JJV0	TSL:1 GENCODE basic APPRIS P1
Cryba4-202	ENSMUST00000112383.7	754	183aa	Protein coding	CCDS84931	E9QAS6	TSL:1 GENCODE basic
Cryba4-201	ENSMUST00000086629.5	746	196aa	Protein coding	CCDS19536	Q3V1A0 Q9JJV0	TSL:1 GENCODE basic APPRIS P1

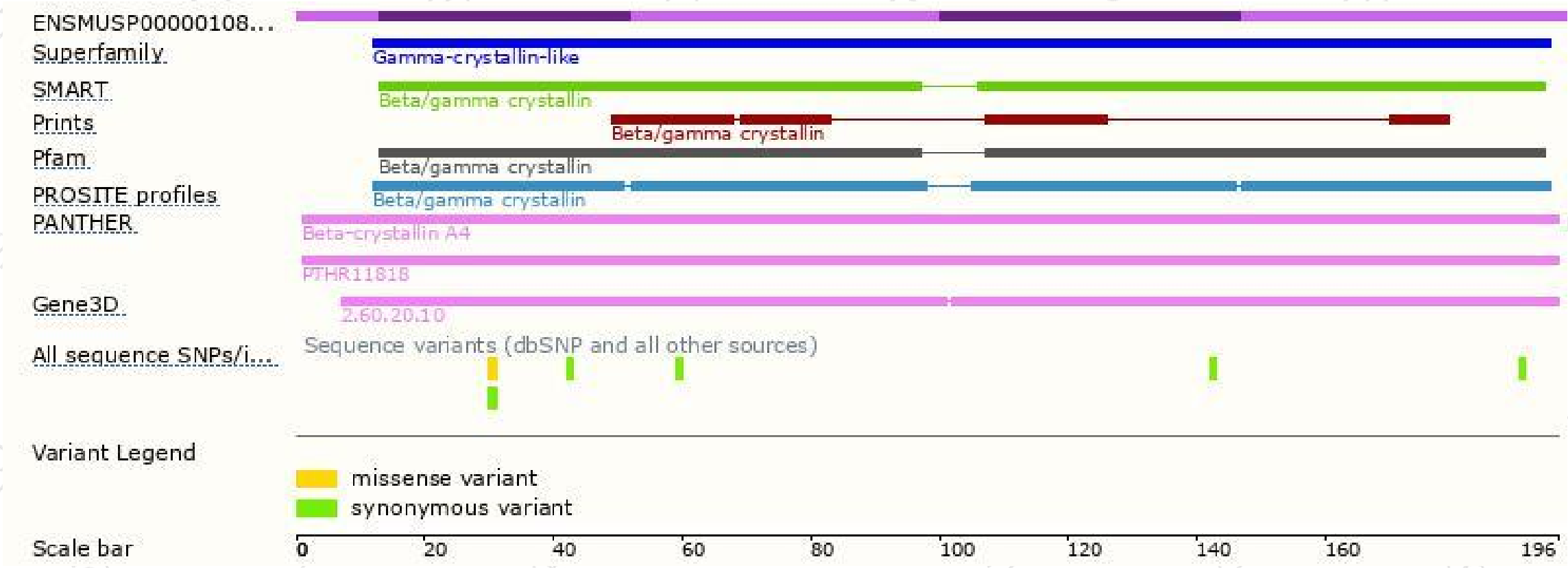
The strategy is based on the design of *Cryba4-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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