

Cryba2 Cas9-KO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Cryba2

Project type

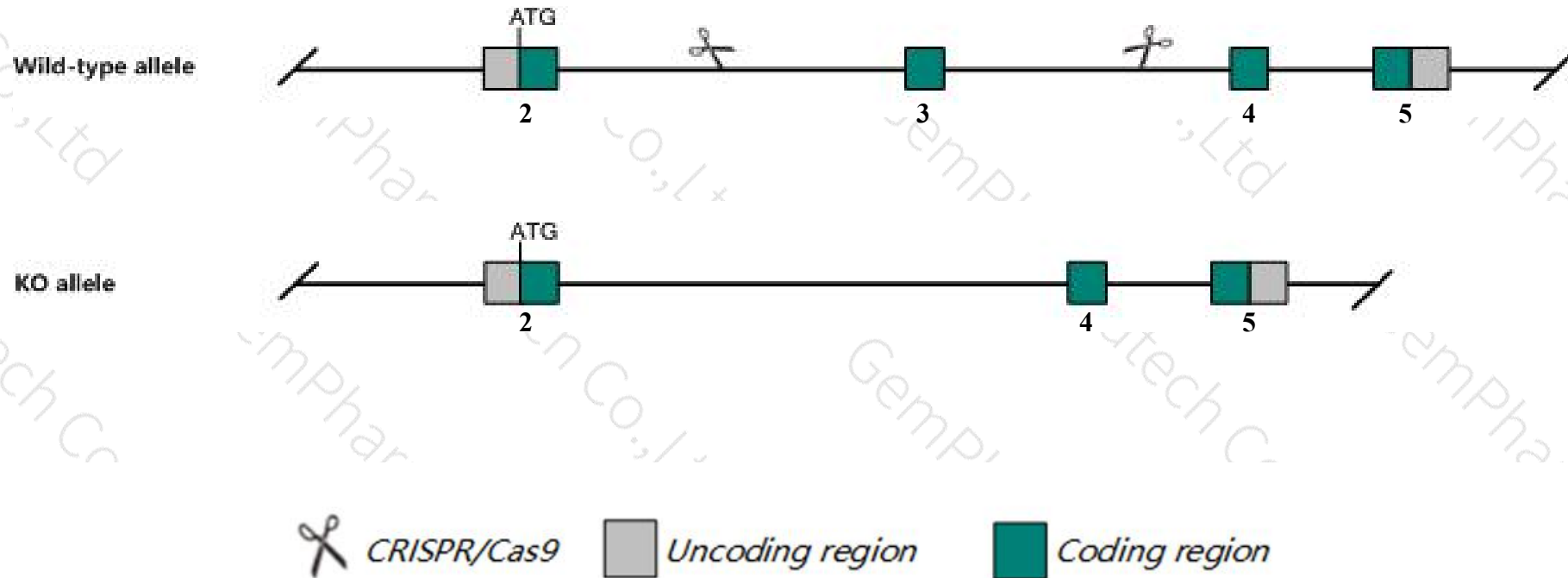
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cryba2* gene. The schematic diagram is as follows:



- The *Cryba2* gene has 2 transcripts. According to the structure of *Cryba2* gene, exon3 of *Cryba2-201* (ENSMUST00000006721.2) transcript is recommended as the knockout region. The region contains 142bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cryba2* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice heterozygous or homozygous for an ENU-induced allele exhibit small lens and cataracts.
- The *Cryba2* gene is located on the Chr1. 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)

Cryba2 crystallin, beta A2 [Mus musculus (house mouse)]

Gene ID: 12958, updated on 31-Jan-2019

Summary



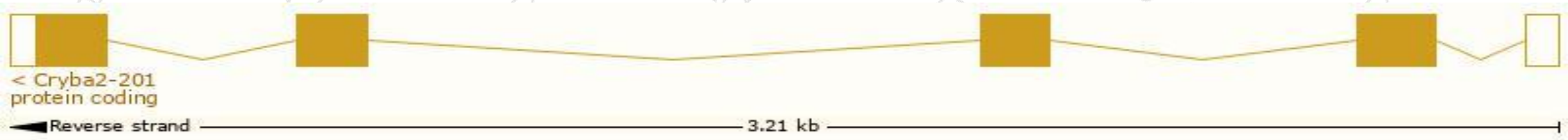
Official Symbol	Cryba2 provided by MGI
Official Full Name	crystallin, beta A2 provided by MGI
Primary source	MGI:MGI:104336
See related	Ensembl:ENSMUSG00000006546
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	E130107M19Rik
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

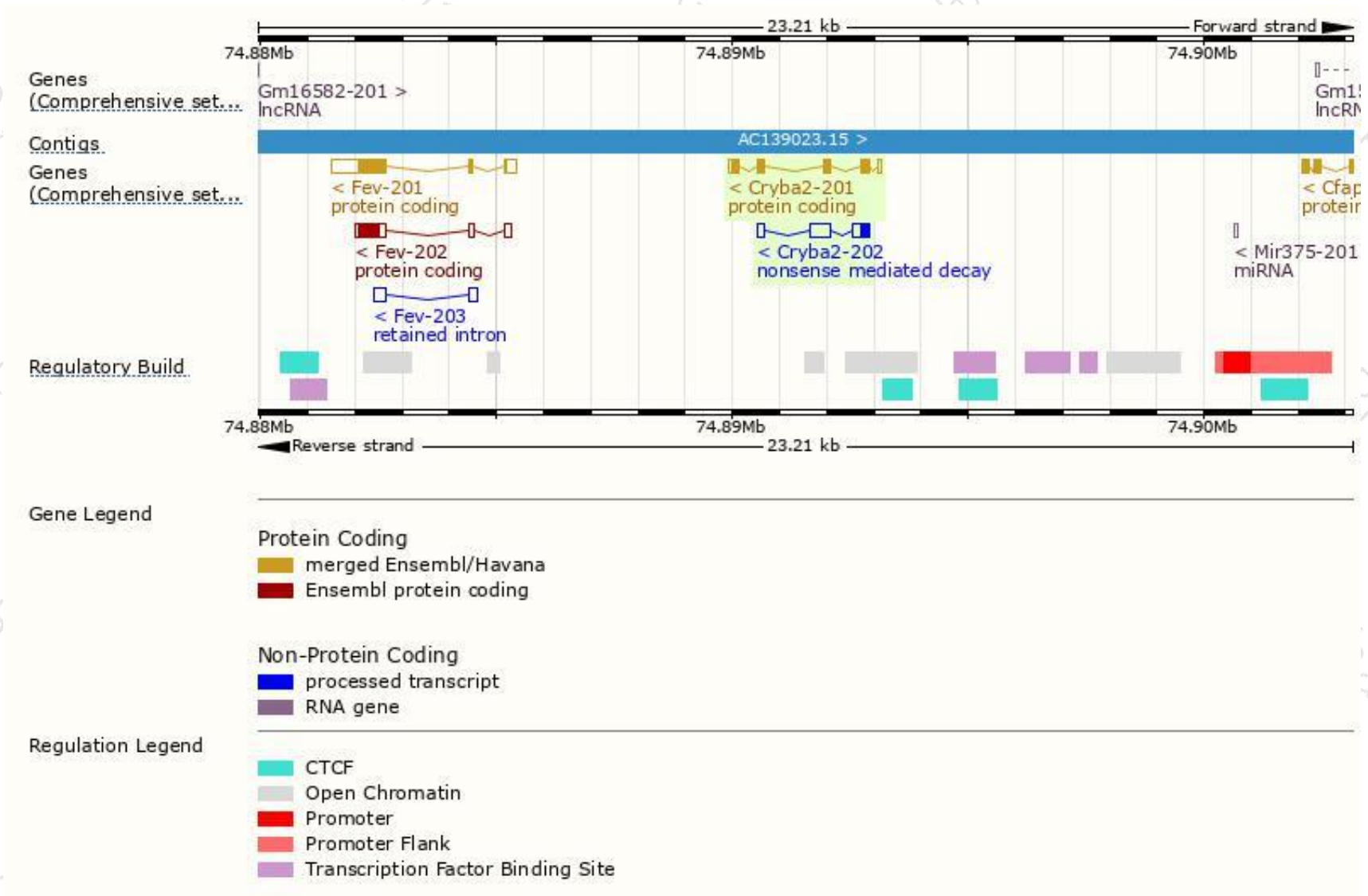
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cryba2-201	ENSMUST00000006721.2	720	197aa	Protein coding	CCDS15059	Q9JJV1	TSL:1 GENCODE basic APPRIS P1
Cryba2-202	ENSMUST00000133833.2	923	54aa	Nonsense mediated decay	-	A0A087WQQ2	TSL:3

The strategy is based on the design of *Cryba2-201* transcript,The transcription is shown below



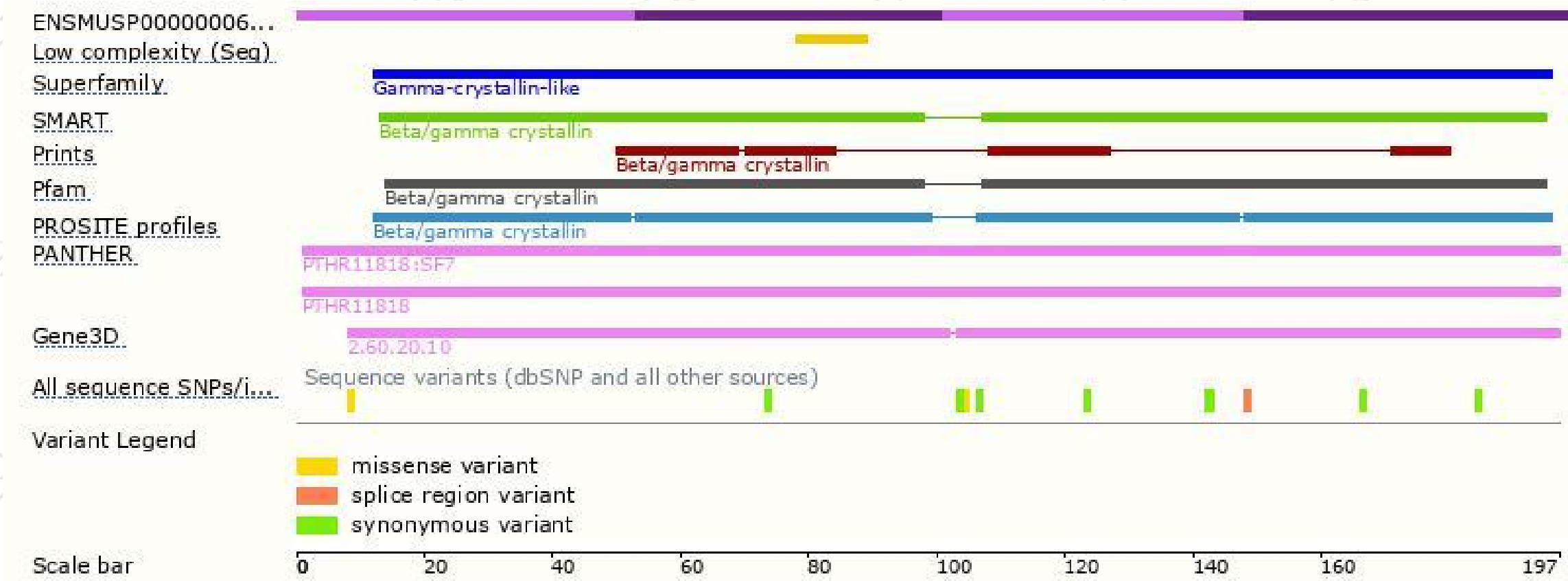
Genomic location distribution



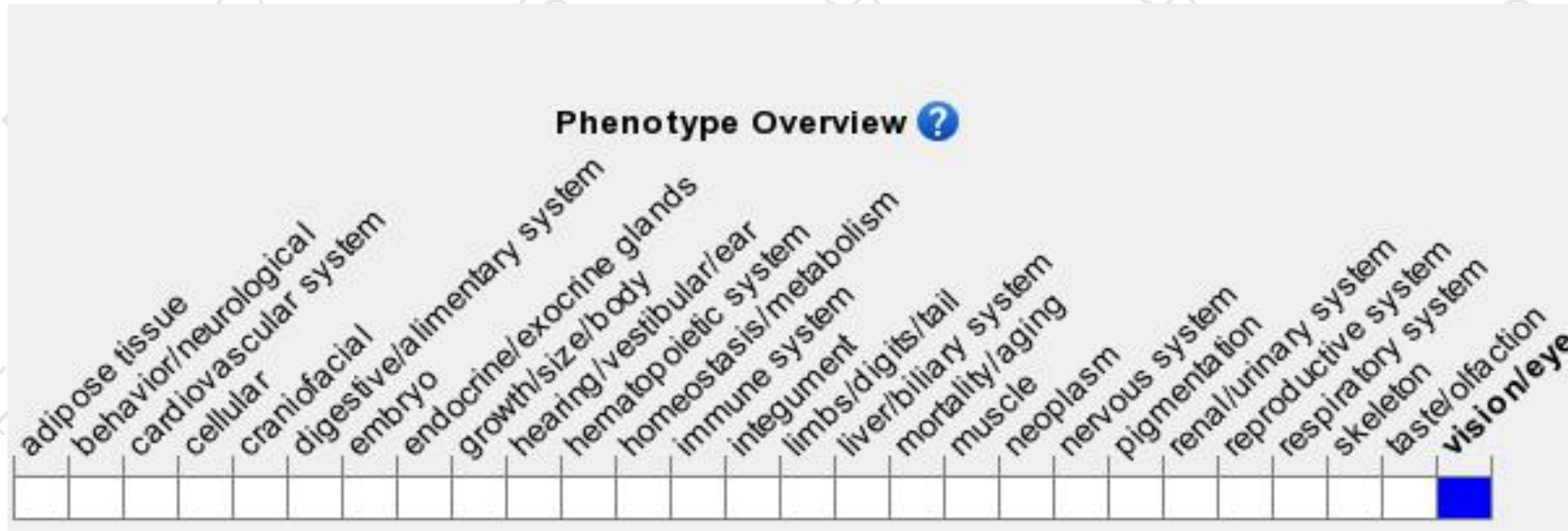
Protein domain



集萃药康
GemPharmatech



Mouse phenotype description(MGI)



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

According to the existing MGI data, Mice heterozygous or homozygous for an ENU-induced allele exhibit small lens and cataracts.

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

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