

Cer1 Cas9-KO Strategy

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Project Overview

Project Name

Cer1

Project type

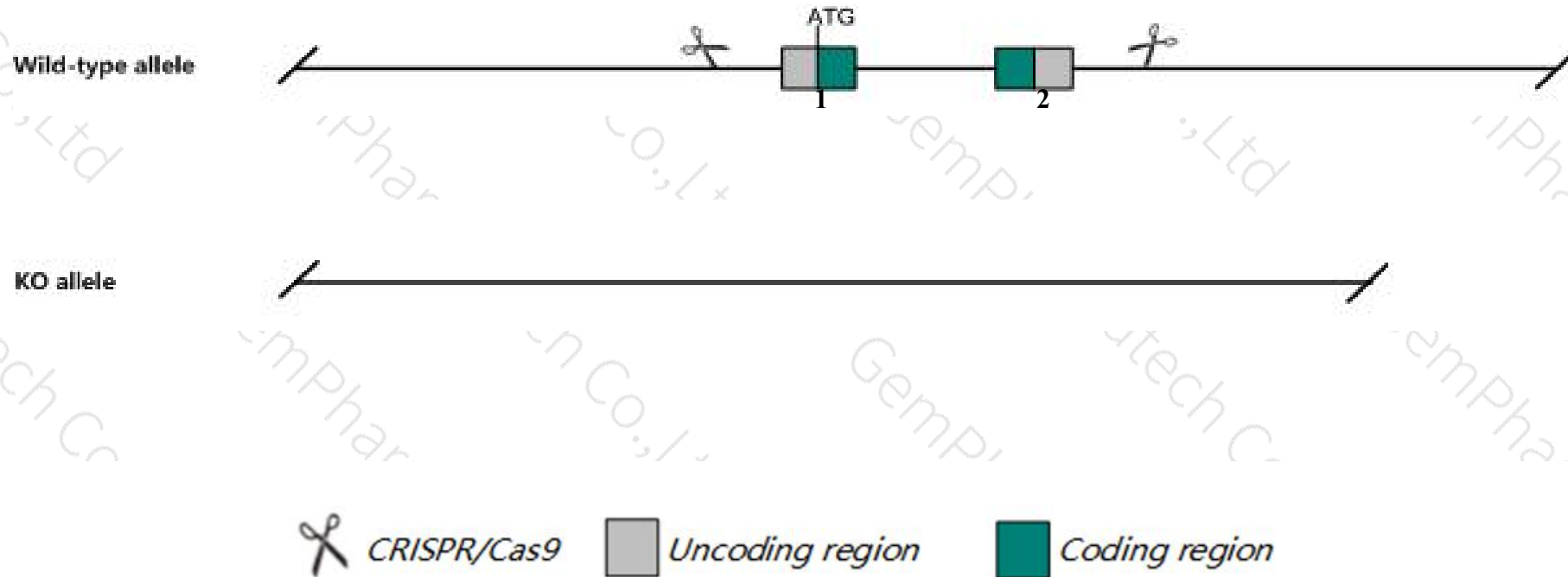
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cer1* gene. The schematic diagram is as follows:



- The *Cer1* gene has 1 transcript. According to the structure of *Cer1* gene, exon1-exon2 of *Cer1-201* (ENSMUST00000048430.3) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cer1* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for most disruptions in this gene appear normal although one allele displays behavioral abnormalities and a mild increase in body weight with age.
- The *Cer1* gene is located on the Chr4. 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)

Cer1 cerberus 1, DAN family BMP antagonist [Mus musculus (house mouse)]

Gene ID: 12622, updated on 31-Jan-2019

Summary



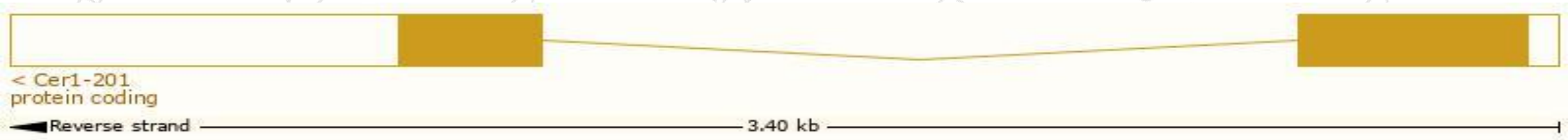
Official Symbol	Cer1 provided by MGI
Official Full Name	cerberus 1, DAN family BMP antagonist provided by MGI
Primary source	MGI:MGI:1201414
See related	Ensembl:ENSMUSG000000038192
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Cer1, Cer11, Cerr1, cer-1
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

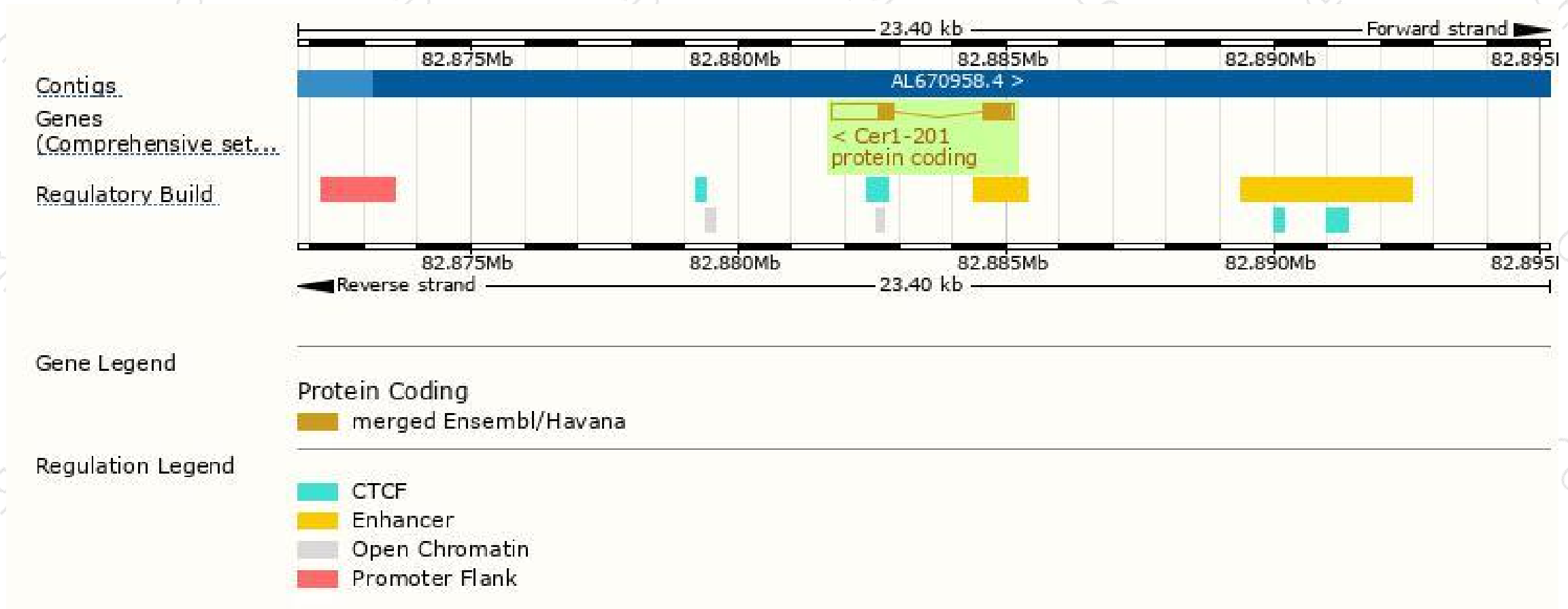
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cer1-201	ENSMUST00000048430.3	1739	272aa	Protein coding	CCDS18295	A2ADM9 O55233	TSL:1 GENCODE basic APPRIS P1

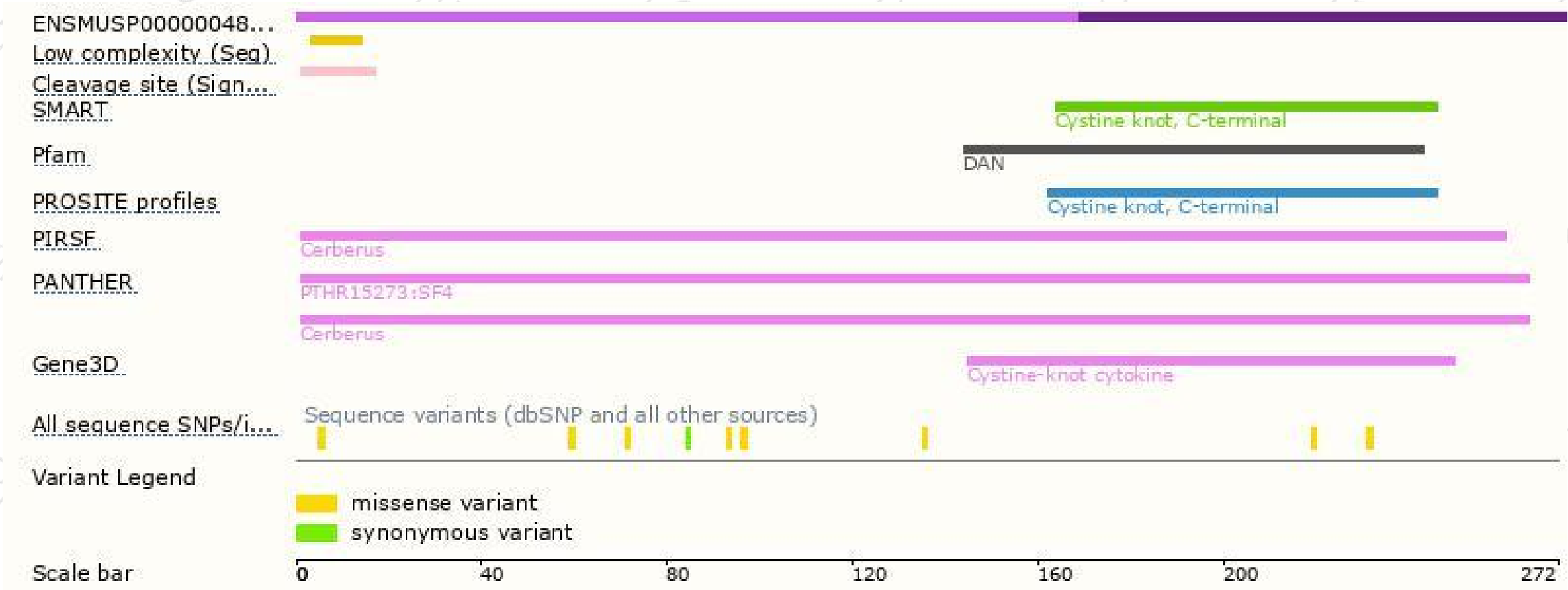
The strategy is based on the design of *Cer1-201* transcript, The transcription is shown below



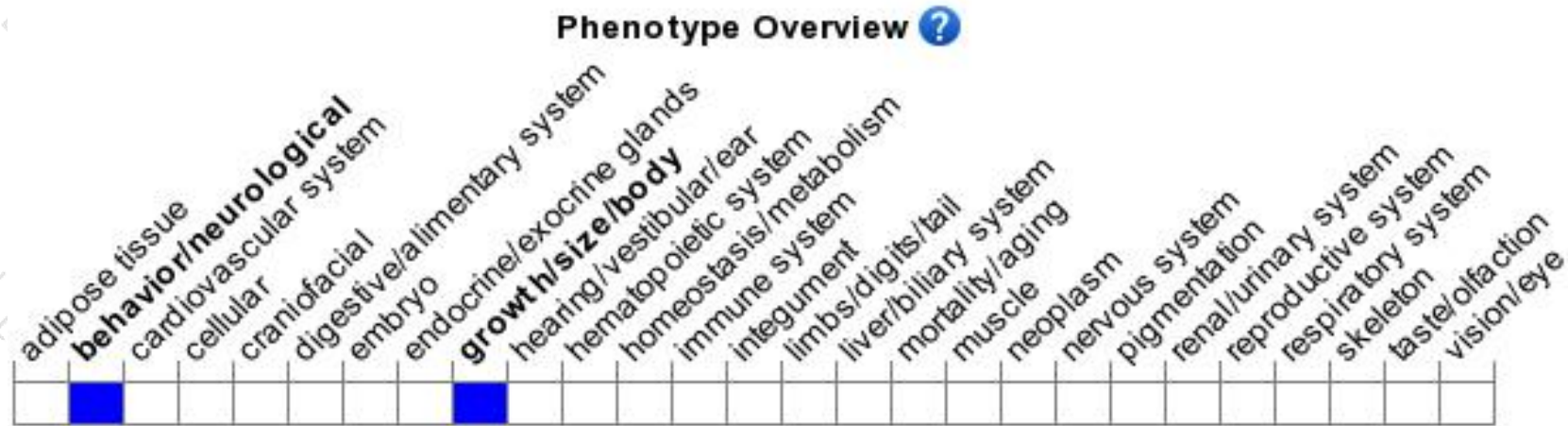
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for most disruptions in this gene appear normal although one allele displays behavioral abnormalities and a mild increase in body weight with age.

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

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