

Chchd4 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Chchd4

Project type

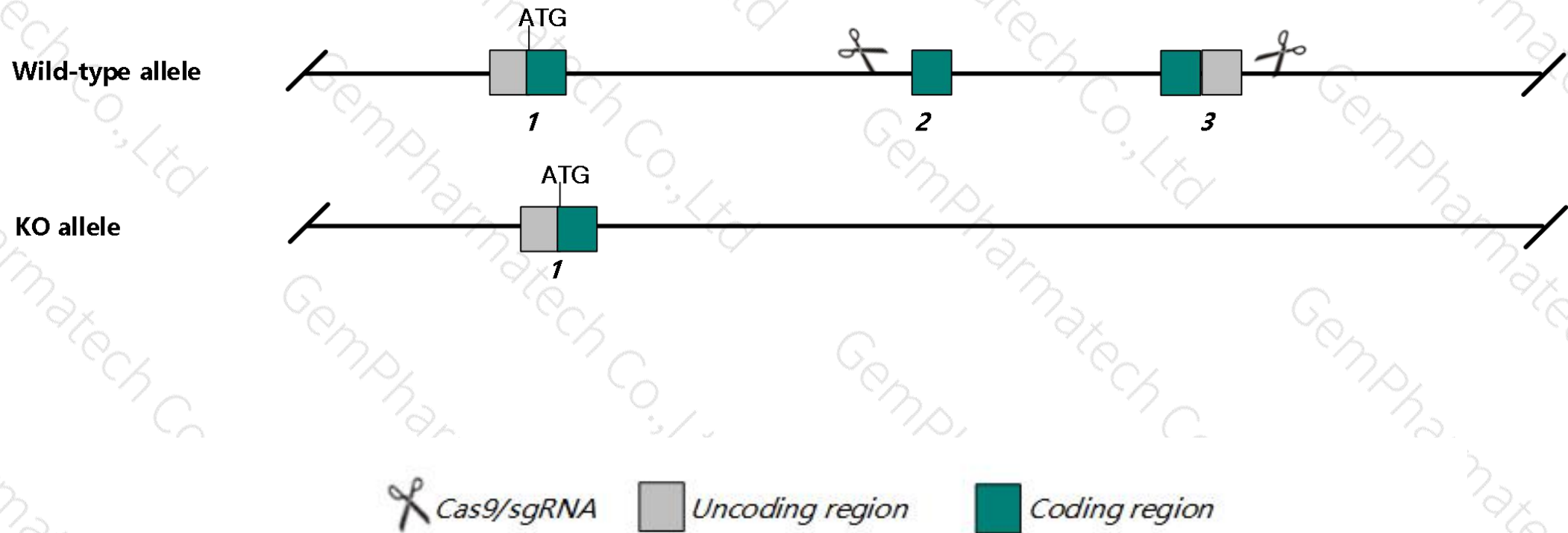
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Chchd4* gene. The schematic diagram is as follows:



- The *Chchd4* gene has 2 transcripts. According to the structure of *Chchd4* gene, exon2-exon3 of *Chchd4-201* (ENSMUST00000040835.8) transcript is recommended as the knockout region. The region contains most 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 *Chchd4* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit decreased body size, sparse and scruffy coat, scaly skin, weakness, hypoactivity, delayed incisor eruption, periodontal pockets around incisors and molars with inserted coat hairs, partial postnatal lethality and premature death.
- The *Chchd4* gene is located on the Chr15. 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)

Chchd4 coiled-coil-helix-coiled-coil-helix domain containing 4 [*Mus musculus* (house mouse)]

Gene ID: 72170, updated on 13-Mar-2020

Summary

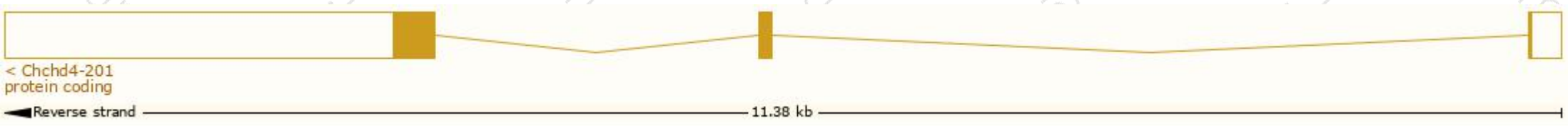
Official Symbol	Chchd4 provided by MGI
Official Full Name	coiled-coil-helix-coiled-coil-helix domain containing 4 provided by MGI
Primary source	MGI:MGI:1919420
See related	Ensembl:ENSMUSG00000034203
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI838740; 2410012P20Rik; 2810014D17Rik
Expression	Ubiquitous expression in placenta adult (RPKM 19.3), CNS E18 (RPKM 16.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

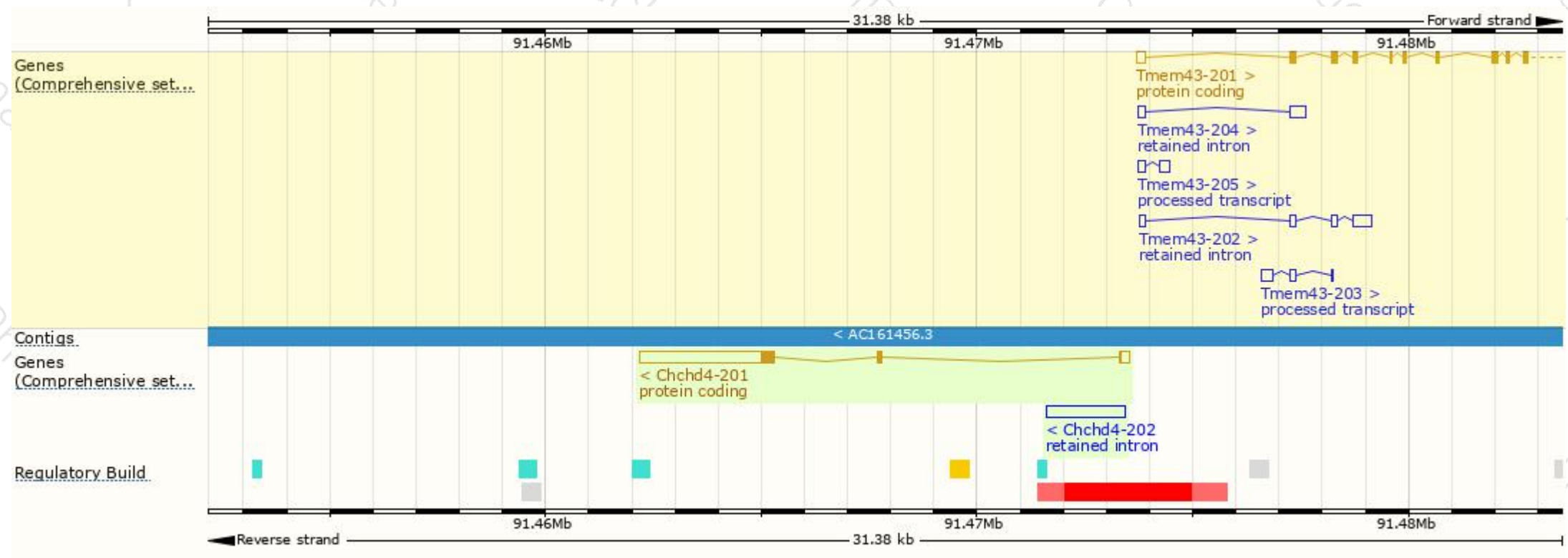
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Chchd4-201	ENSMUST00000040835.8	3472	139aa	Protein coding	CCDS20367	Q8VEA4	TSL:1 GENCODE basic APPRIS P1
Chchd4-202	ENSMUST000000205802.1	1854	No protein	Retained intron	-	-	TSL:NA

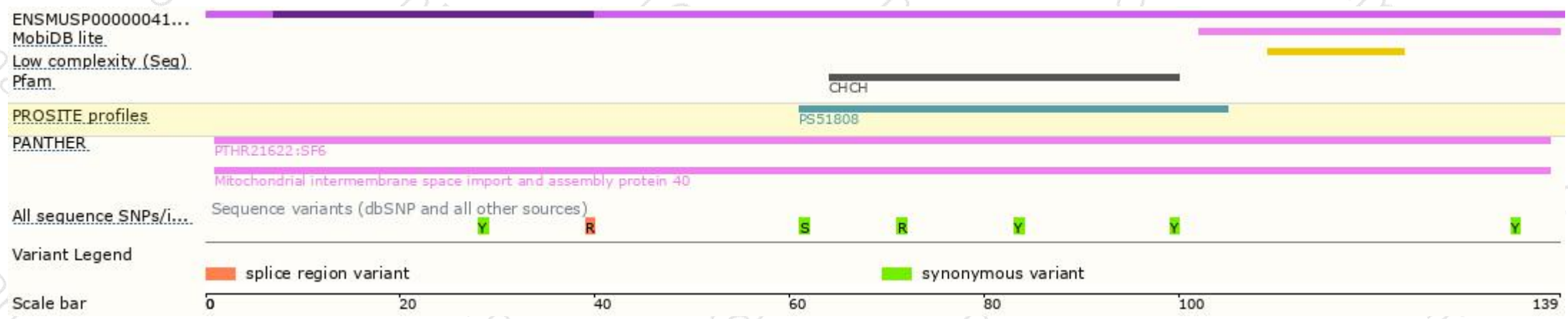
The strategy is based on the design of *Chchd4-201* transcript,The transcription is shown below



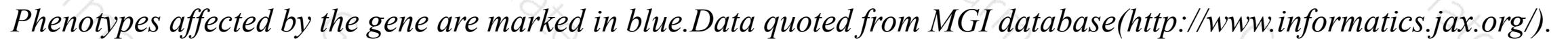
Genomic location distribution



Protein domain



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

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