Zdhhc15 Cas9-KO Strategy

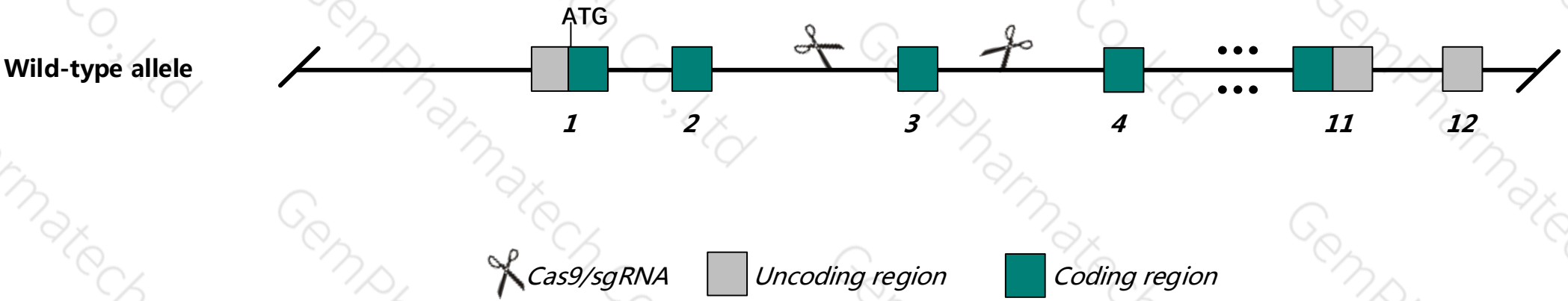
Designer:Xiaojing Li
Reviewer:JiaYu
Design Date:2020-3-24

Project Overview

Project Name	***Zdhhc15***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zdhhc15* gene. The schematic diagram is as follows:



Technical routes

➢ The *Zdhhc15* gene has 1 transcript. According to the structure of *Zdhhc15* gene, exon3 of *Zdhhc15-201* (ENSMUST00000042070.5) transcript is recommended as the knockout region.The region contains 95bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Zdhhc15* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6JGpt mice.Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.

Notice

➢ According to the existing MGI data,Male chimeras hemizygous for a gene trapped allele exhibit a severe developmental delay and neural tube defects.

➢ The *Zdhhc15* gene is located on the ChrX. 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）

集萃药康 GemPharmatech

Zdhhc15 zinc finger, DHHC domain containing 15 [*Mus musculus* (house mouse)]

Gene ID: 108672, updated on 13-Mar-2020

Summary

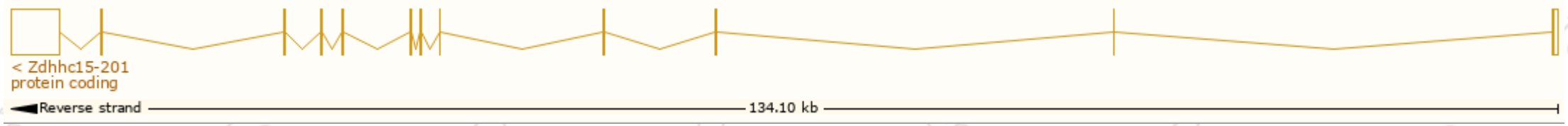
Official Symbol	Zdhhc15 provided by MGI
Official Full Name	zinc finger, DHHC domain containing 15 provided by MGI
Primary source	MGI:MGI:1915336
See related	Ensembl:ENSMUSG00000033906
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	6030457O13Rik
Expression	Broad expression in limb E14.5 (RPKM 3.1), CNS E11.5 (RPKM 2.2) and 22 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

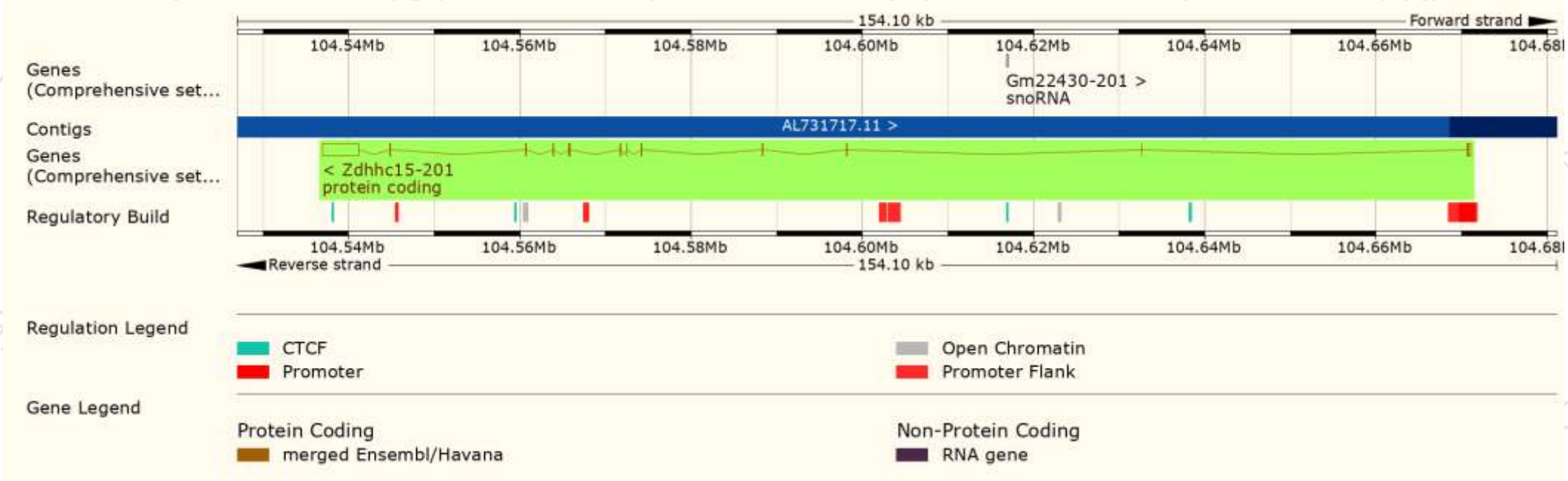
The gene has 1 transcript,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zdhhc15-201	ENSMUST00000042070.5	5509	337aa	Protein coding	CCDS30332	Q8BGJ0	TSL:1 GENCODE basic APPRIS P1

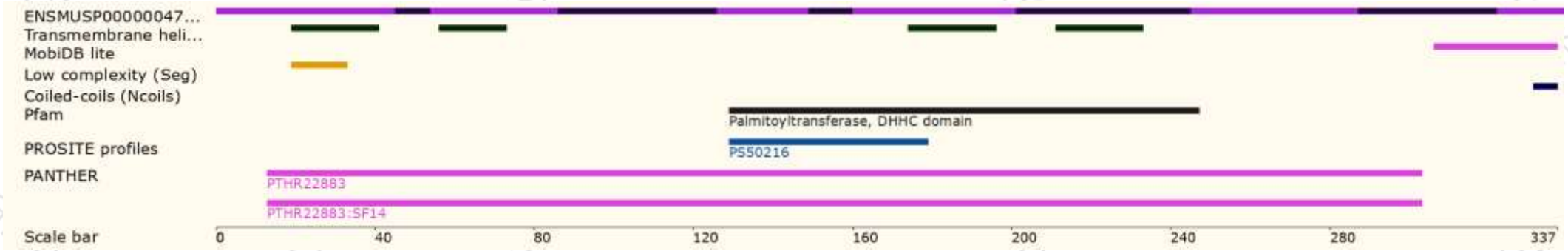
The strategy is based on the design of *Zdhhc15-201* transcript,The transcription is shown below



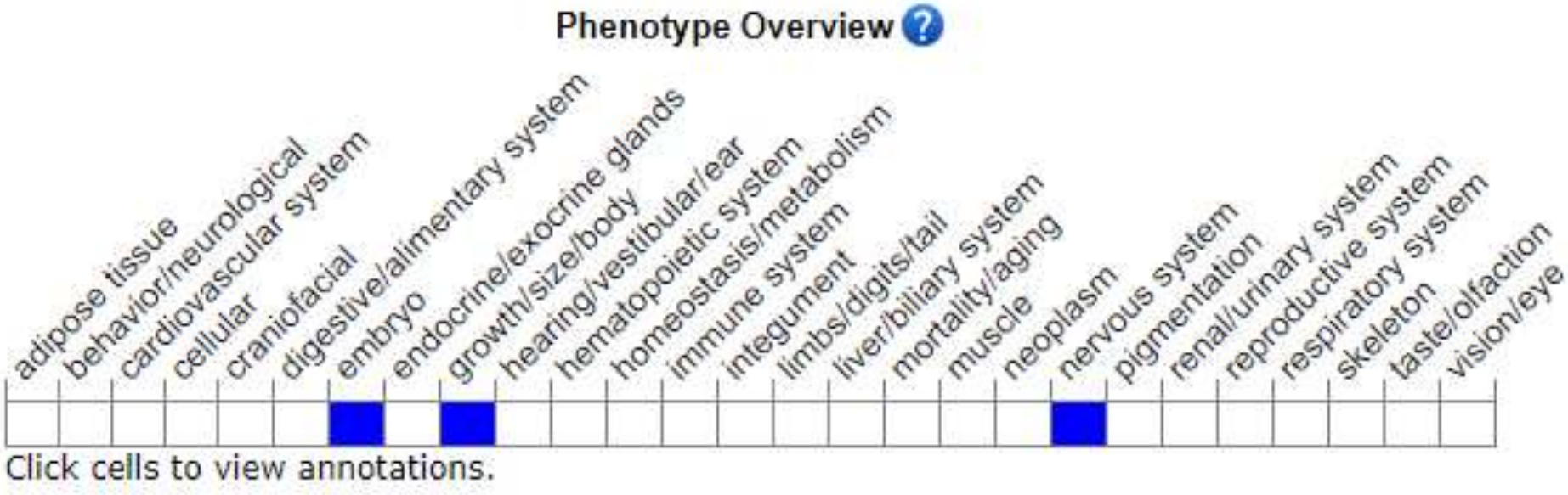
Genomic location distribution



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/).

Male chimeras hemizygous for a gene trapped allele exhibit a severe developmental delay and neural tube defects.

集萃药康
GemPharmatech

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

Tel: 025-5864 1534

集萃药康生物科技
GemPharmatech Co.,Ltd