

Cad Cas9-KO Strategy

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Project Overview

Project Name

Cad

Project type

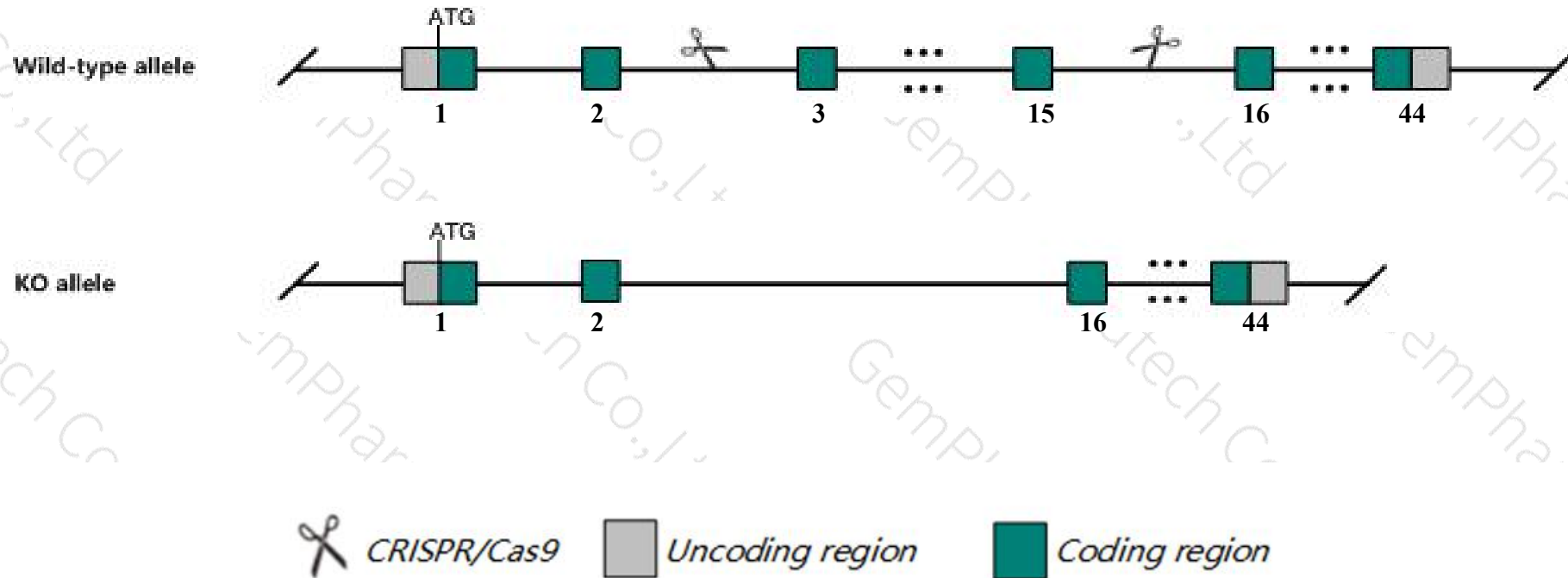
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Cad* gene has 14 transcripts. According to the structure of *Cad* gene, exon3-exon15 of *Cad-201* (ENSMUST00000013773.11) transcript is recommended as the knockout region. The region contains 2065bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cad* gene. The brief process is as follows: CRISPR/Cas9 system w

- The *Cad* 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.
- Transcript 214 CDS 5' and 3' incomplete the influences is unknown.
- 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)

Cad carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase [Mus musculus (house mouse)]

Gene ID: 69719, updated on 7-Apr-2019

Summary



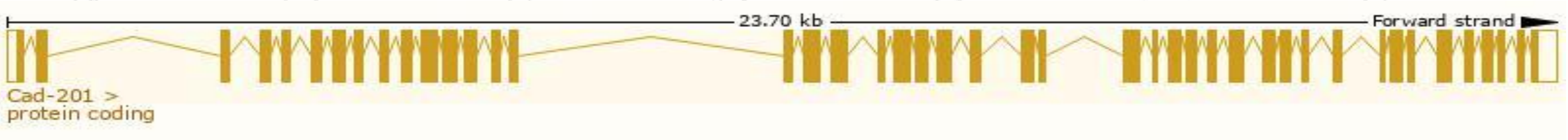
Official Symbol	Cad provided by MGI
Official Full Name	carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase provided by MGI
Primary source	MGI:MGI:1916969
See related	Ensembl:ENSMUSG00000013629
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410008J01Rik, AU018859, Cpad
Expression	Broad expression in genital fat pad adult (RPKM 79.4), ovary adult (RPKM 22.9) and 21 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

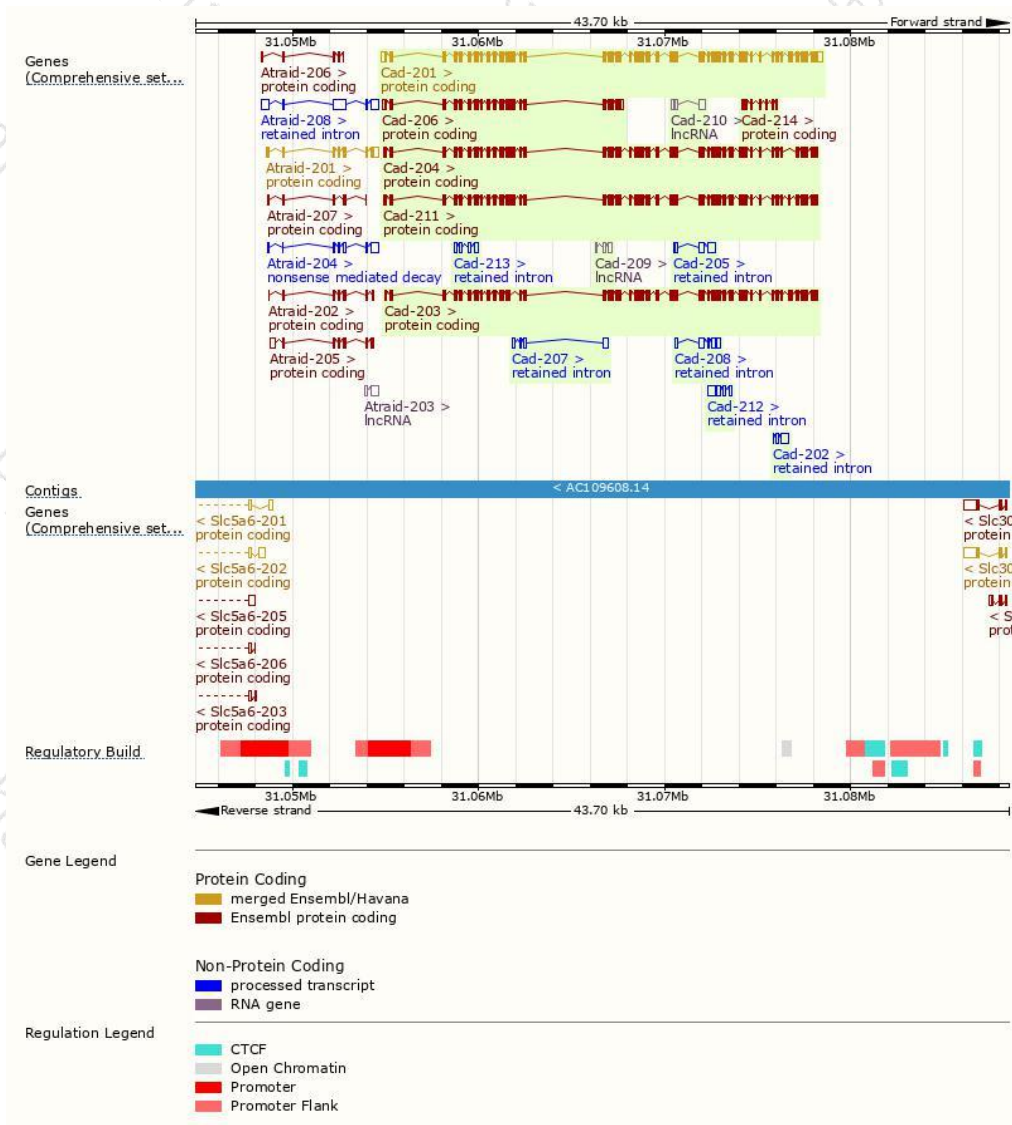
The gene has 14 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cad-201	ENSMUST00000013773.11	7137	2225aa	Protein coding	CCDS19171	B2RQC6	TSL:1 GENCODE basic APPRIS P1
Cad-211	ENSMUST00000202795.3	6559	2164aa	Protein coding	CCDS80245	G3UWN2	TSL:1 GENCODE basic
Cad-204	ENSMUST00000201182.3	6529	2154aa	Protein coding	CCDS80246	B2RQC6	TSL:1 GENCODE basic
Cad-203	ENSMUST00000200953.3	6489	2162aa	Protein coding	-	E9QAI5	TSL:5 GENCODE basic
Cad-206	ENSMUST00000201838.3	3153	971aa	Protein coding	-	E9QAT6	TSL:1 GENCODE basic
Cad-214	ENSMUST00000202973.1	582	194aa	Protein coding	-	F6S3Z3	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:3
Cad-212	ENSMUST00000202827.1	802	No protein	Retained intron	-	-	TSL:2
Cad-208	ENSMUST00000201870.3	772	No protein	Retained intron	-	-	TSL:5
Cad-205	ENSMUST00000201256.3	758	No protein	Retained intron	-	-	TSL:3
Cad-207	ENSMUST00000201844.1	710	No protein	Retained intron	-	-	TSL:3
Cad-202	ENSMUST00000200917.1	658	No protein	Retained intron	-	-	TSL:3
Cad-213	ENSMUST00000202967.1	646	No protein	Retained intron	-	-	TSL:5
Cad-210	ENSMUST00000202391.3	583	No protein	lncRNA	-	-	TSL:2
Cad-209	ENSMUST00000202227.1	346	No protein	lncRNA	-	-	TSL:3

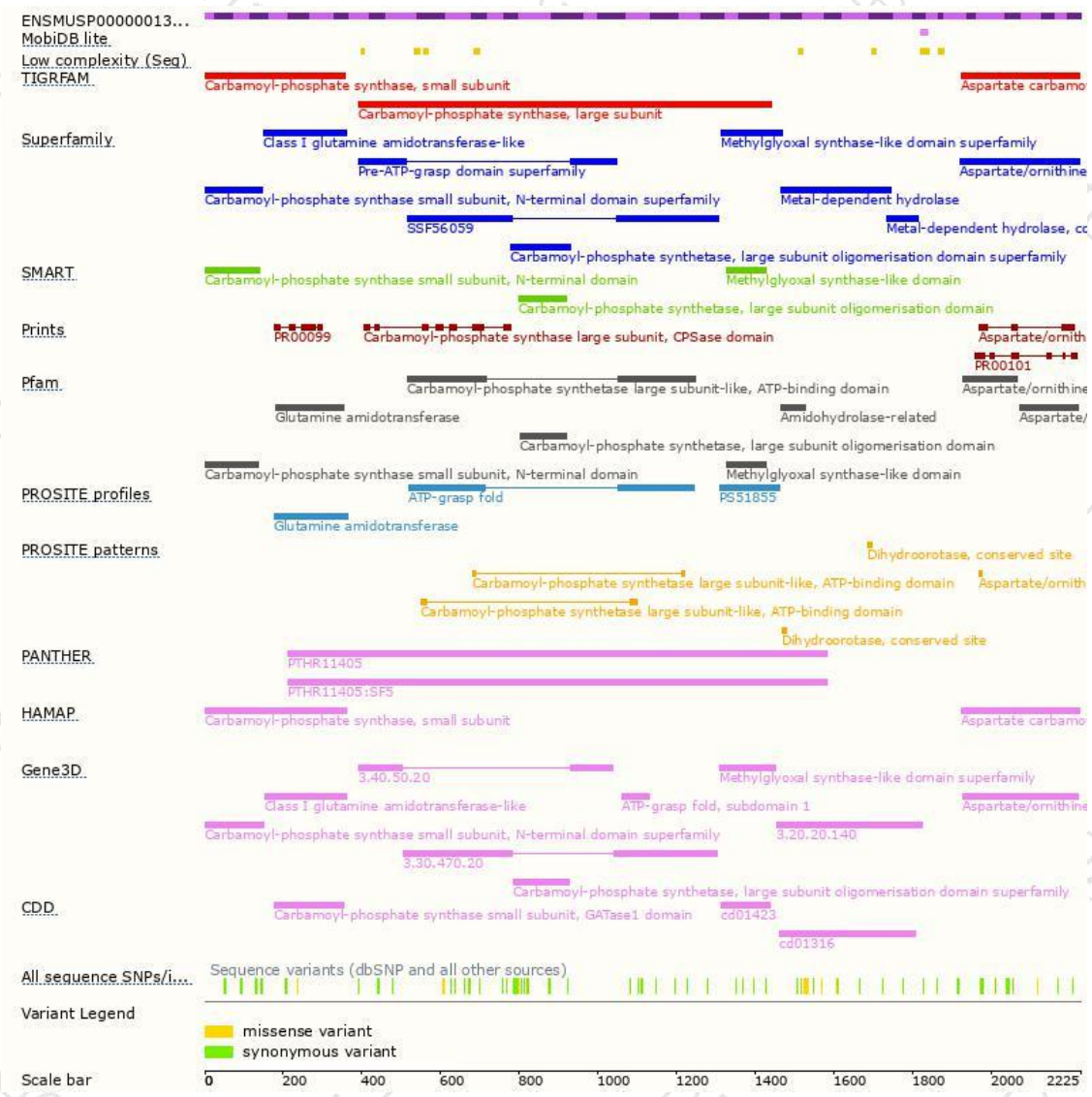
The strategy is based on the design of *Cad-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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