

Jdp2 Cas9-KO Strategy

Designer: Xueting Zhang

Reviewer: Yanhua Shen

Date: 2020-02-05

Project Overview

Project Name

Jdp2

Project type

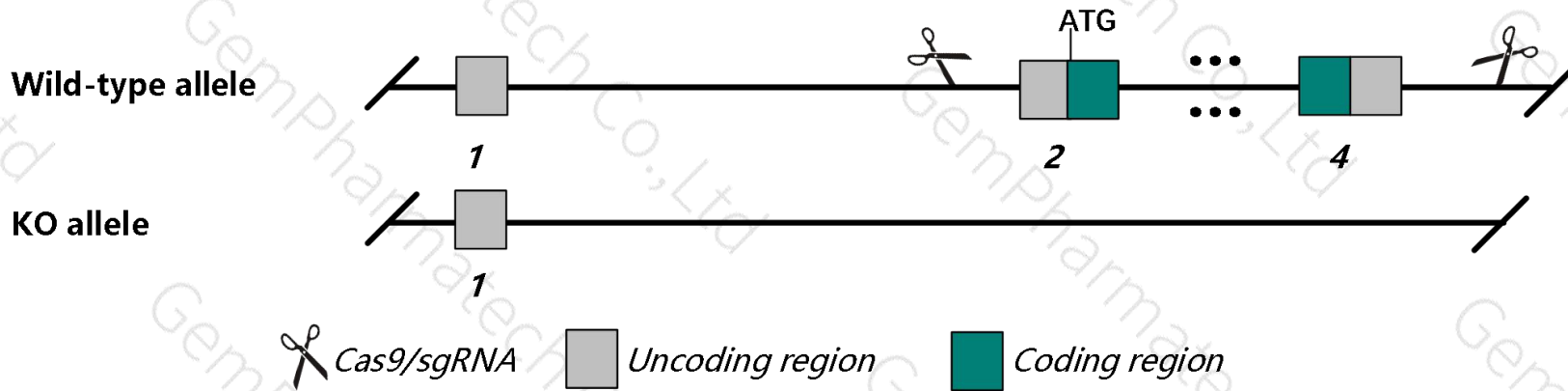
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Jdp2* gene. The schematic diagram is as follows:



- The *Jdp2* gene has 4 transcripts. According to the structure of *Jdp2* gene, exon2-exon4 of *Jdp2-203* (ENSMUST00000177587.8) 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 *Jdp2* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for a null allele exhibit increased white adipose tissue differentiation, short tail, and enhanced wound healing due to increased cell proliferation.
- The *Jdp2* gene is located on the Chr12. 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)

Jdp2 Jun dimerization protein 2 [*Mus musculus* (house mouse)]

Gene ID: 81703, updated on 10-Dec-2019

Summary

- Official Symbol** Jdp2 provided by [MGI](#)
- Official Full Name** Jun dimerization protein 2 provided by [MGI](#)
- Primary source** [MGI:MGI:1932093](#)
- See related** [Ensembl:ENSMUSG00000034271](#)
- 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** TIF; Jundm2; Jundp2
- Expression** Ubiquitous expression in placenta adult (RPKM 10.5), limb E14.5 (RPKM 9.3) and 26 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 12; 12 D2 See Jdp2 in [Genome Data Viewer](#)

Exon count: 6

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	12	NC_000078.6 (85598656..85639878)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	12	NC_000078.5 (86940366..86980828)

Transcript information (Ensembl)

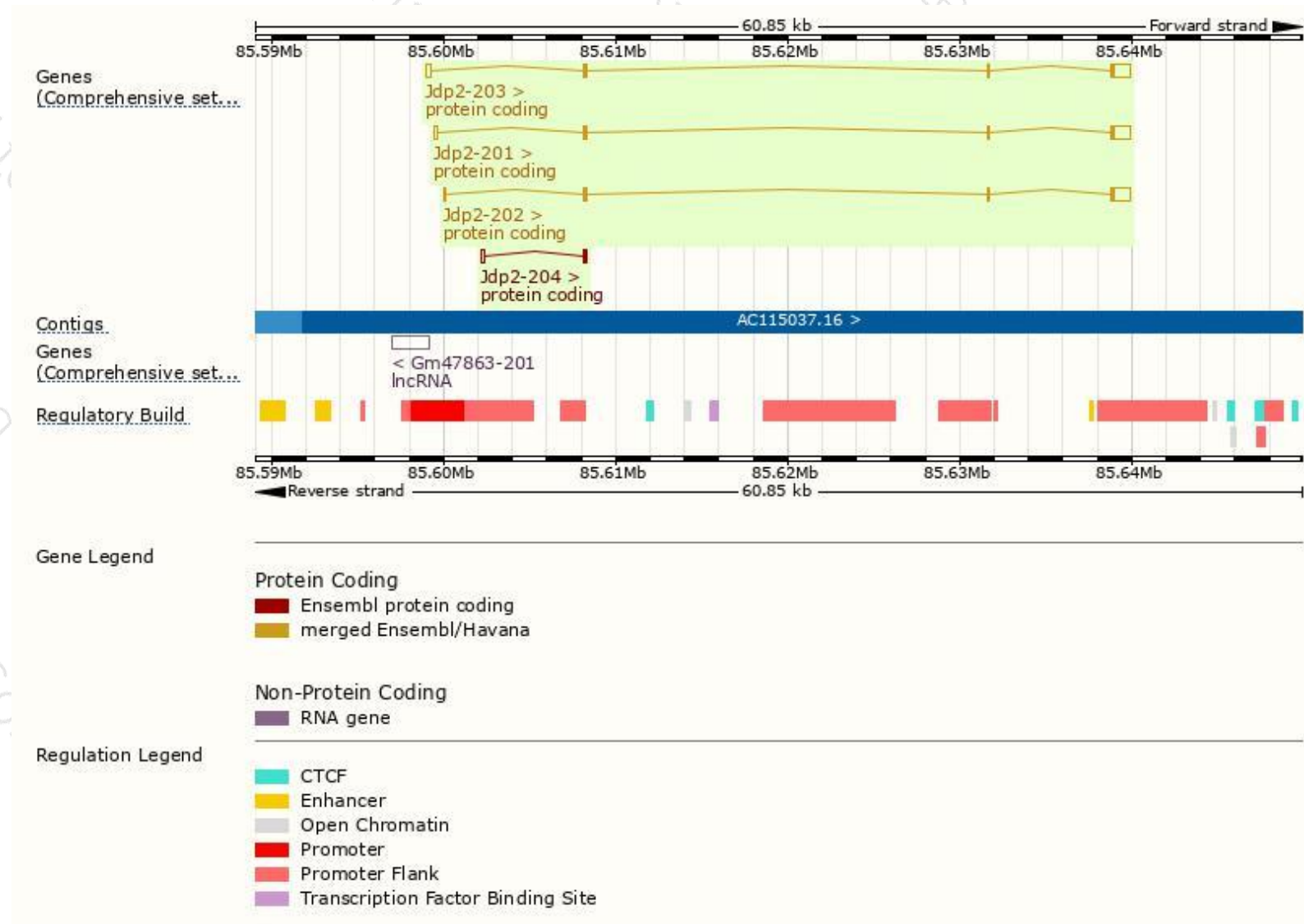
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Jdp2-203	ENSMUST00000177587.8	1645	163aa	Protein coding	CCDS26060	P97875	TSL:1 GENCODE basic APPRIS P1
Jdp2-201	ENSMUST00000050687.13	1643	163aa	Protein coding	CCDS26060	P97875	TSL:1 GENCODE basic APPRIS P1
Jdp2-202	ENSMUST00000171754.2	1559	163aa	Protein coding	CCDS26060	P97875	TSL:1 GENCODE basic APPRIS P1
Jdp2-204	ENSMUST00000222689.1	349	42aa	Protein coding	-	A0A1Y7VLU6	CDS 3' incomplete TSL:3

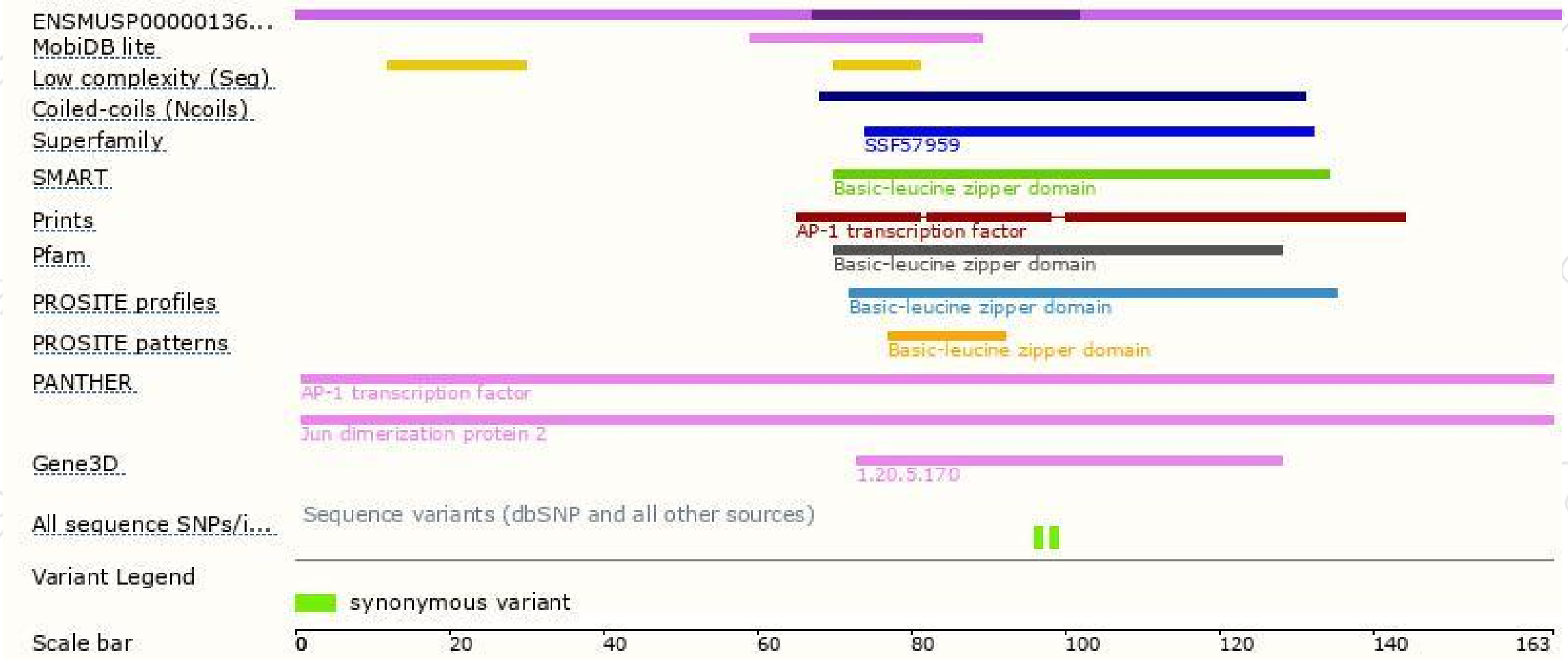
The strategy is based on the design of *Jdp2-203* transcript,The transcription is shown below



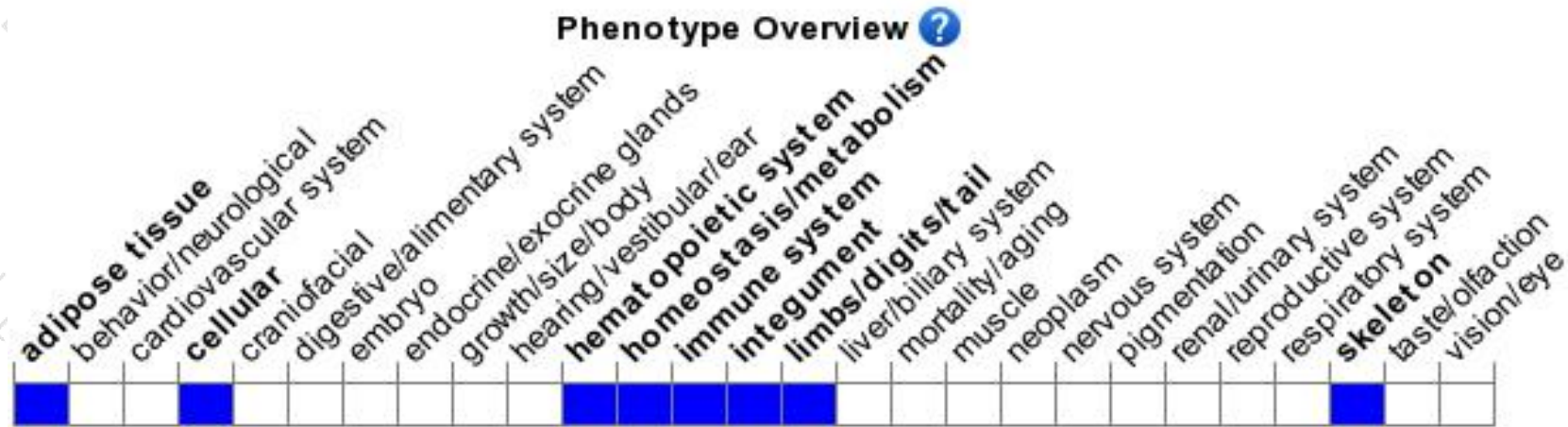
Genomic location distribution



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 a null allele exhibit increased white adipose tissue differentiation, short tail, and enhanced wound healing due to increased cell proliferation.

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

Tel: 400-9660890

