

Dnmbp Cas9-KO Strategy

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Design Date:

2020-2-20

Project Overview



Project Name

Dnmbp

Project type

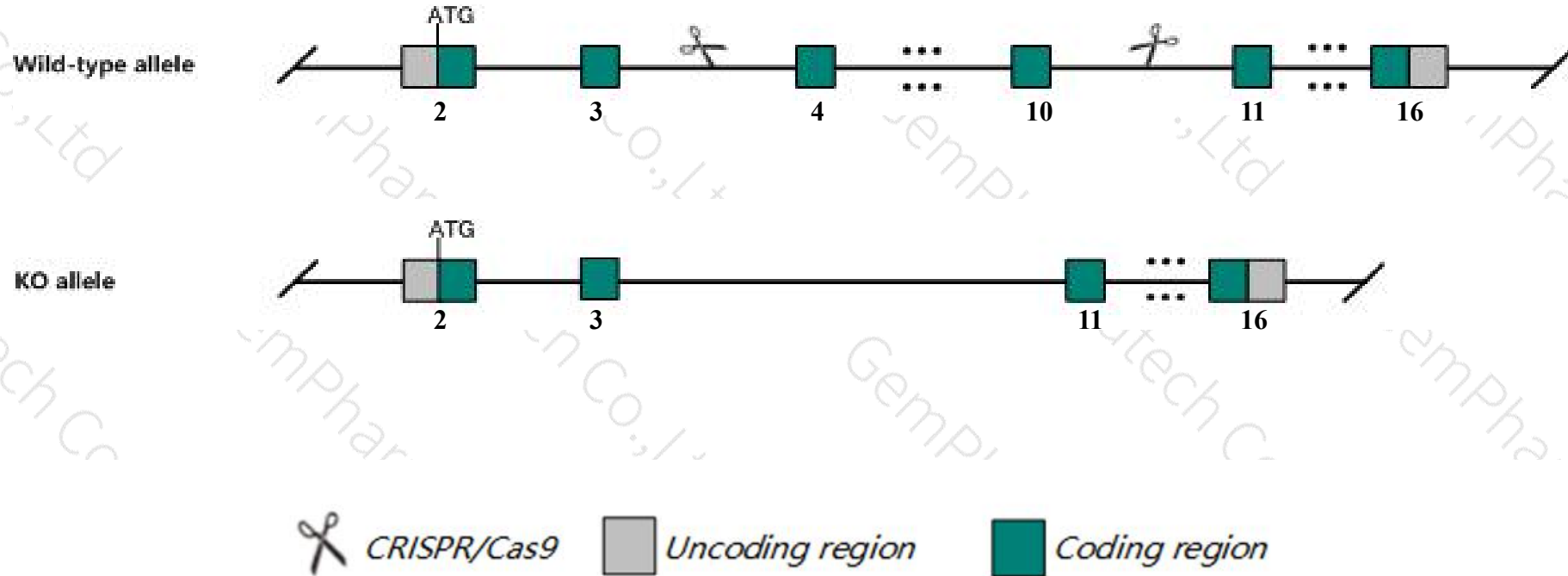
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Dnmbp* gene has 6 transcripts. According to the structure of *Dnmbp* gene, exon4-exon10 of *Dnmbp*-205 (ENSMUST00000212396.1) transcript is recommended as the knockout region. The region contains 2897bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dnmbp* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- The *Dnmbp* gene is located on the Chr19. 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)

Dnmbp dynamin binding protein [Mus musculus (house mouse)]

Gene ID: 71972, updated on 19-Mar-2019

Summary



Official Symbol	Dnmbp provided by MGI
Official Full Name	dynamin binding protein provided by MGI
Primary source	MGI:MGI:1917352
See related	Ensembl:ENSMUSG00000025195
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410003L07Rik, 2410003M15Rik, TUBA
Summary	This gene encodes a member of the DBL family of guanine nucleotide exchange factors. The encoded protein has been proposed to regulate the actin cytoskeleton by specifically activating the Rho-family GTPase Cdc42. An interaction between the encoded protein and a Listeria protein has been shown to mediate Listeria infection. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Apr 2015]
Expression	Ubiquitous expression in colon adult (RPKM 15.1), large intestine adult (RPKM 10.7) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

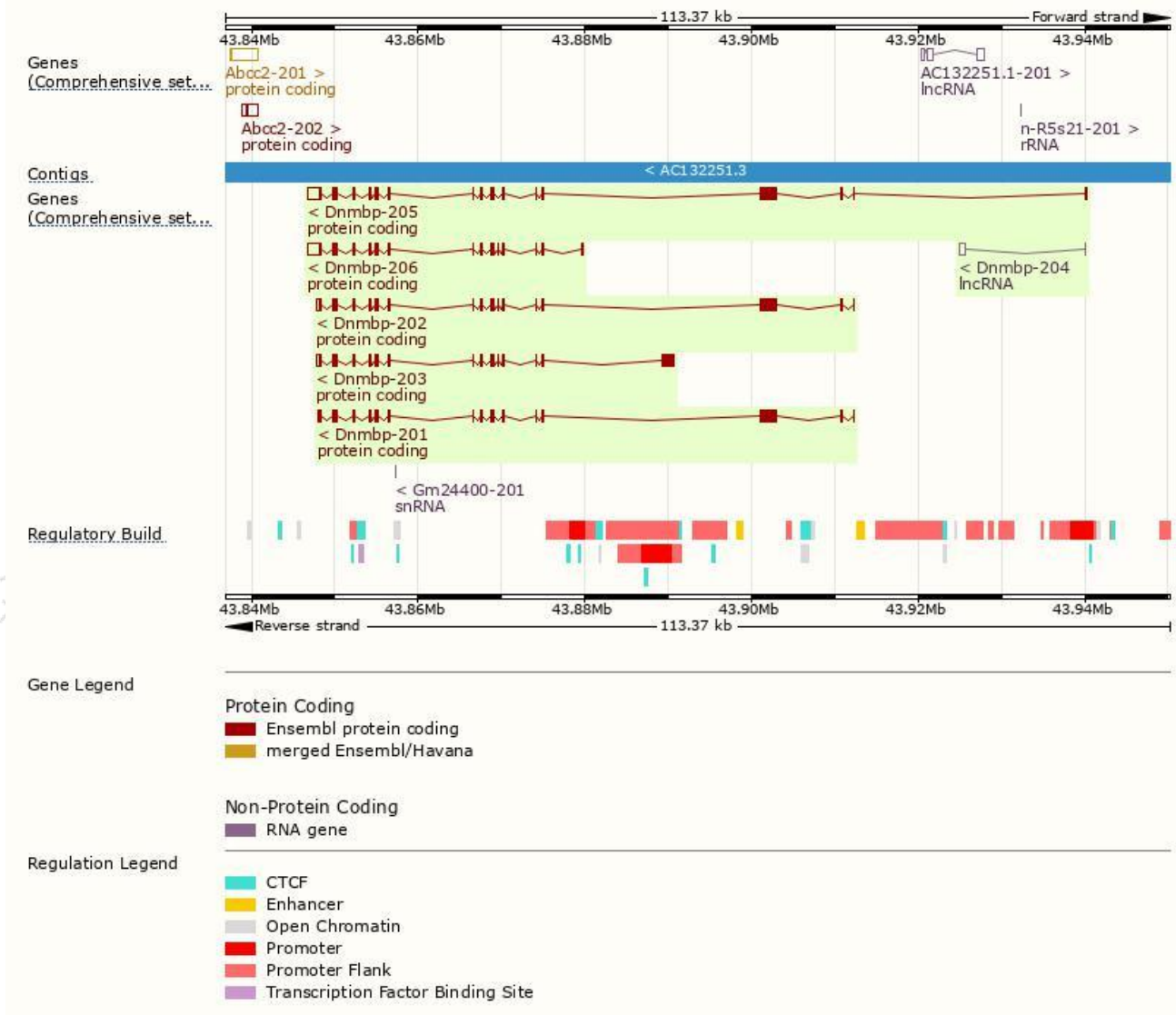
The gene has 6 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dnmbp-205	ENSMUST00000212396.1	6100	1580aa	Protein coding	CCDS29839	A0A0R4J055	TSL:5 GENCODE basic APPRIS P2
Dnmbp-201	ENSMUST0000026209.4	4882	1580aa	Protein coding	CCDS29839	A0A0R4J055	TSL:2 GENCODE basic APPRIS P2
Dnmbp-206	ENSMUST00000212592.1	3901	823aa	Protein coding	CCDS84442	A0A1D5RLL6	TSL:1 GENCODE basic
Dnmbp-202	ENSMUST00000212032.1	5074	1576aa	Protein coding	-	A0A1D5RMB5	TSL:5 GENCODE basic APPRIS ALT2
Dnmbp-203	ENSMUST00000212048.1	4186	1264aa	Protein coding	-	A0A1D5RLY0	TSL:5 GENCODE basic
Dnmbp-204	ENSMUST00000212157.1	661	No protein	lncRNA	-	-	TSL:1

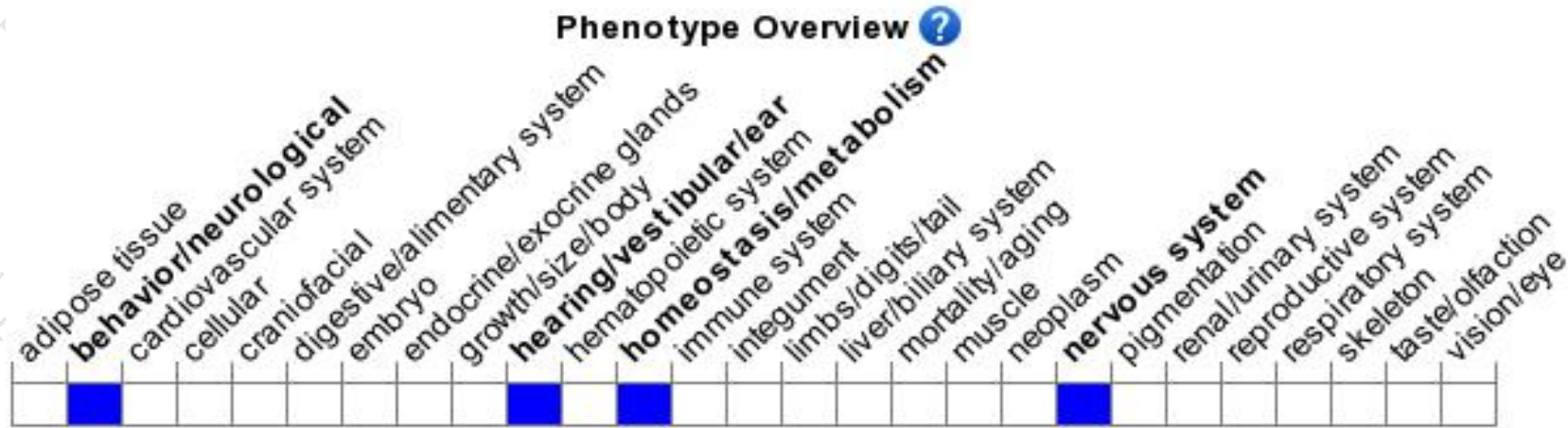
The strategy is based on the design of *Dnmbp-205* transcript, The transcription is shown below



Genomic location distribution



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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