

Arcn1 Cas9-KO Strategy

Designer:

JiaYu

Reviewer:

Xiaojing Li

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Project Overview

Project Name

Arcn1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Arcn1* gene. The schematic diagram is as follows:



- The *Arcn1* gene has 6 transcripts. According to the structure of *Arcn1* gene, exon2-exon4 of *Arcn1-201* (ENSMUST00000034607.9) transcript is recommended as the knockout region. The region contains 650bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Arcn1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a spontaneous mutation have a dilute coat color and neurological defects.
- The *Arcn1* gene is located on the Chr9. 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)

Arcn1 archain 1 [Mus musculus (house mouse)]

Gene ID: 213827, updated on 7-Apr-2019

Summary



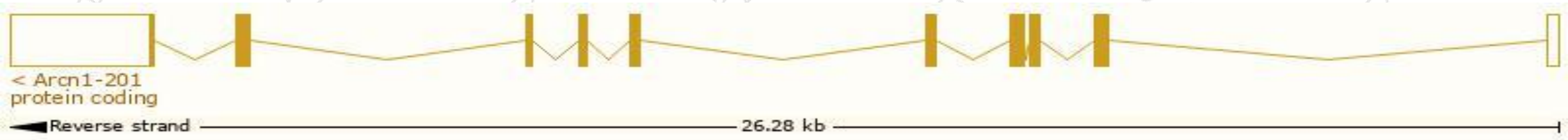
Official Symbol	Arcn1 provided by MGI
Official Full Name	archain 1 provided by MGI
Primary source	MGI:MGI:2387591
See related	Ensembl:ENSMUSG000000032096
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4632432M07Rik, nur17
Expression	Ubiquitous expression in placenta adult (RPKM 54.6), limb E14.5 (RPKM 40.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

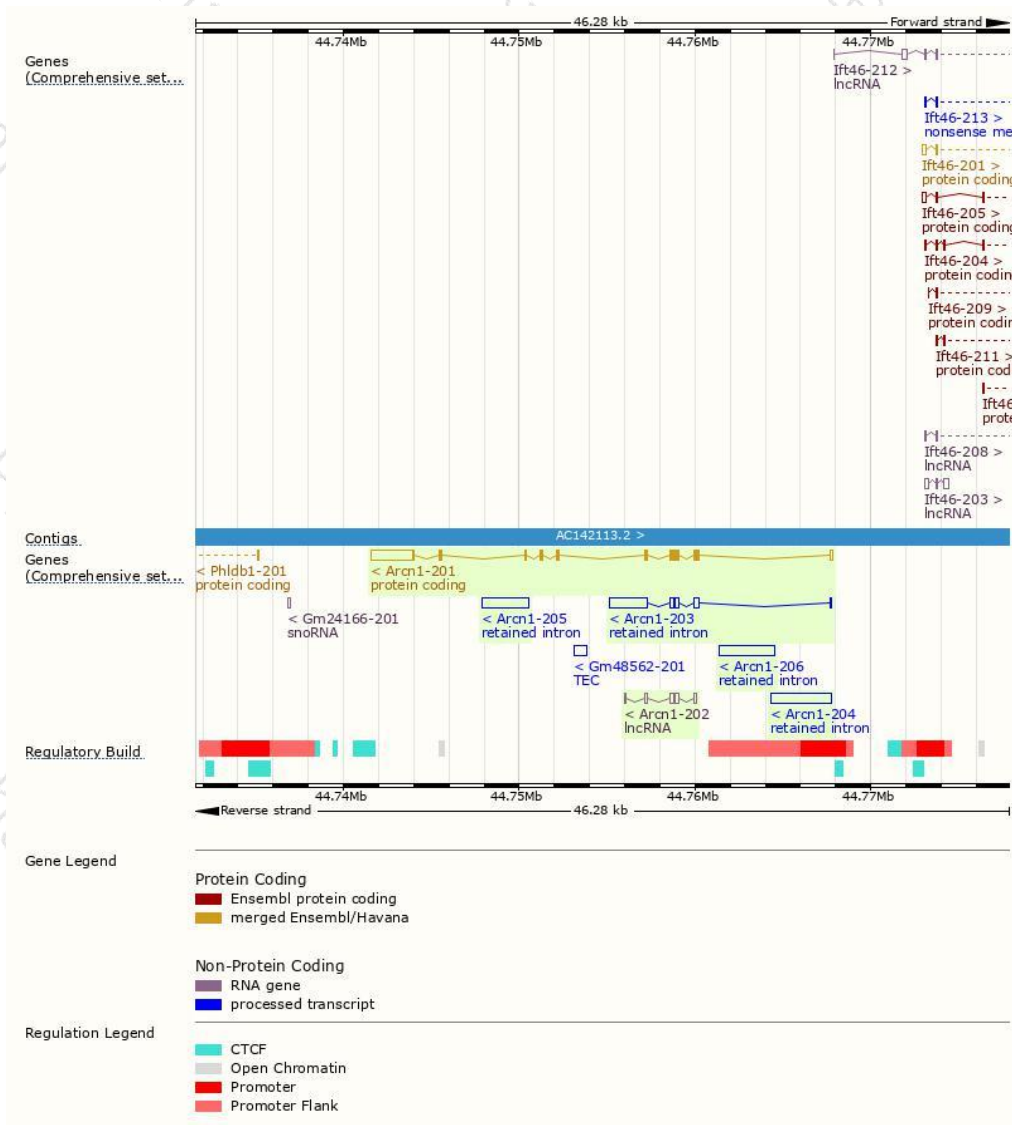
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Arcn1-201	ENSMUST00000034607.9	4072	511aa	Protein coding	CCDS40602	Q5XJY5	TSL:1 GENCODE basic APPRIS P1
Arcn1-204	ENSMUST00000215140.1	3497	No protein	Retained intron	-	-	TSL:NA
Arcn1-206	ENSMUST00000217199.1	3211	No protein	Retained intron	-	-	TSL:NA
Arcn1-203	ENSMUST00000150160.7	2956	No protein	Retained intron	-	-	TSL:1
Arcn1-205	ENSMUST00000217194.1	2616	No protein	Retained intron	-	-	TSL:NA
Arcn1-202	ENSMUST00000125164.1	739	No protein	lncRNA	-	-	TSL:5

The strategy is based on the design of *Arcn1-201* transcript,The transcription is shown below



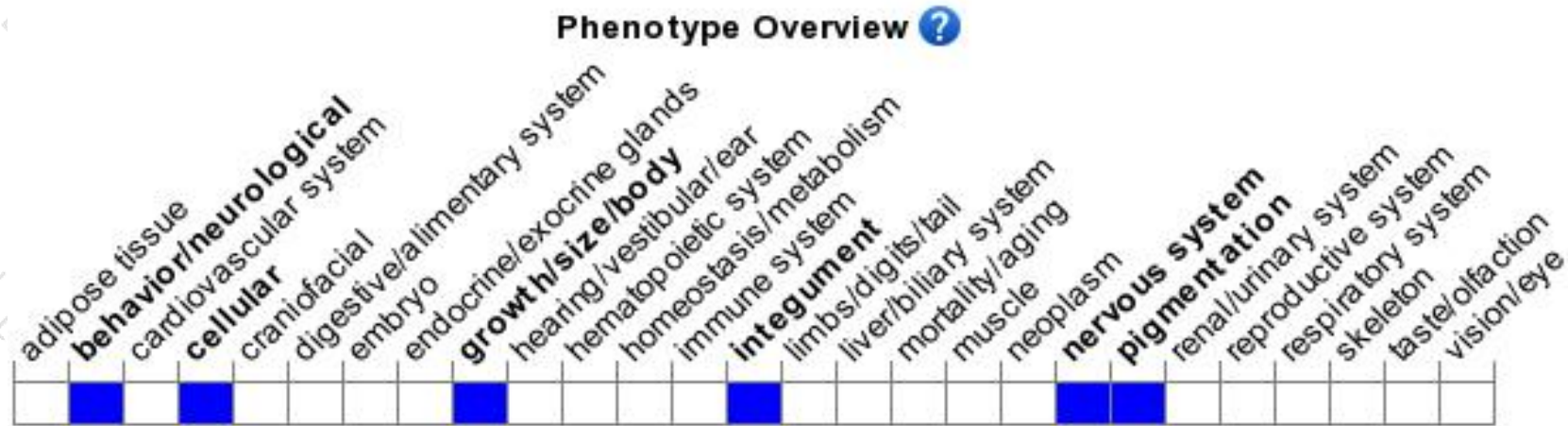
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a spontaneous mutation have a dilute coat color and neurological defects.

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

Tel: 400-9660890

