

Incenp Cas9-KO Strategy

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Project Overview

Project Name

Incenp

Project type

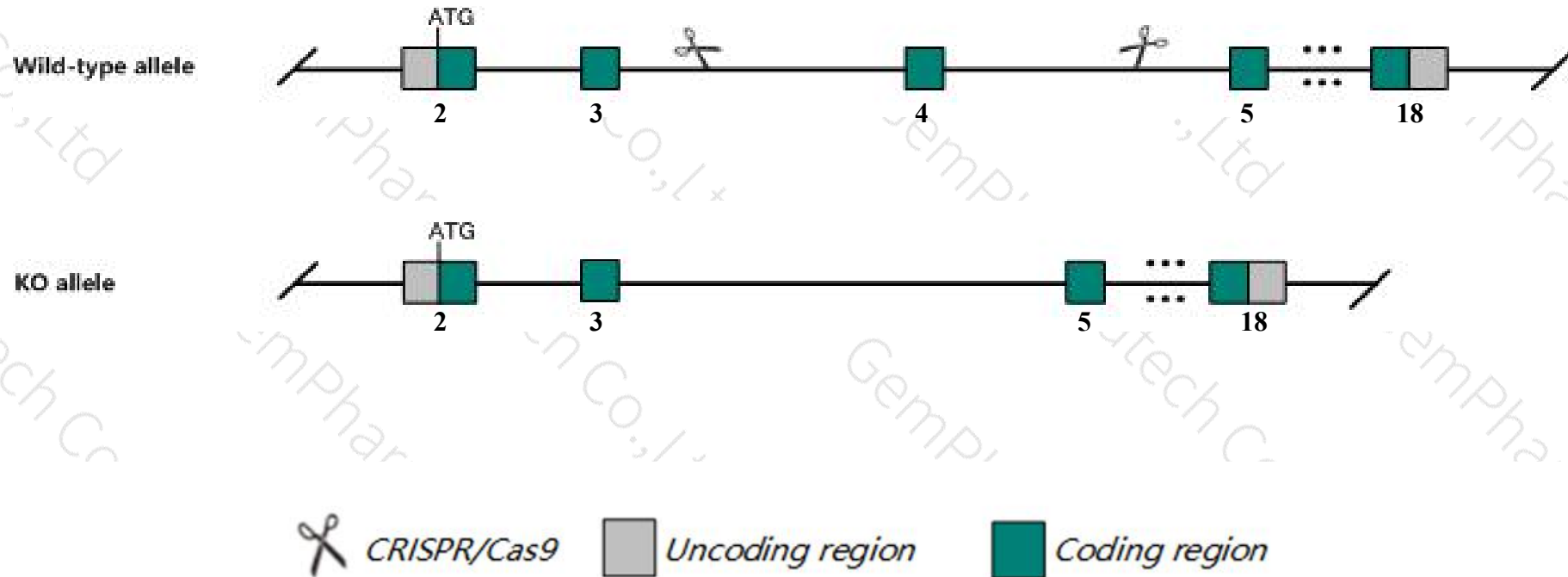
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Incenp* gene has 9 transcripts. According to the structure of *Incenp* gene, exon4 of *Incenp-201* (ENSMUST00000025562.8) transcript is recommended as the knockout region. The region contains 737bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Incenp* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Homozygous mutant embryos die before E8.5. Embryonic cells exhibit abnormal nuclei and aberrant mitosis.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- Transcript 202,203,206 may not be affected. The effect of transcripts 204,207,208 is unknown.
- The *Incenp* 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)

Incenp inner centromere protein [*Mus musculus* (house mouse)]

Gene ID: 16319, updated on 24-Oct-2019

Summary



Official Symbol	Incenp provided by MGI
Official Full Name	inner centromere protein provided by MGI
Primary source	MGI:MGI:1313288
See related	Ensembl:ENSMUSG00000024660
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	C77457; AU019509; C130081E20; 2700067E22Rik
Expression	Broad expression in liver E14 (RPKM 26.8), CNS E11.5 (RPKM 25.6) and 19 other tissues See more
Orthologs	human all

Genomic context



Location: 19 A; 19 6.1 cM

Exon count: 20

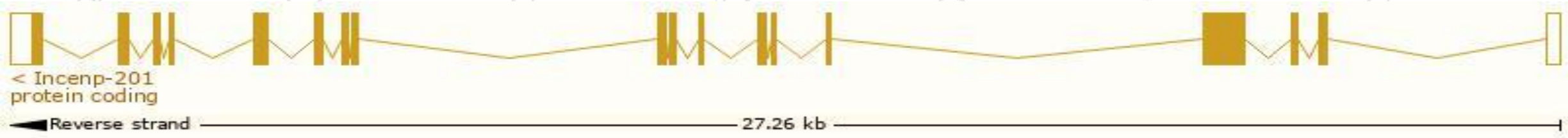
See Incenp in [Genome Data Viewer](#)

Transcript information (Ensembl)

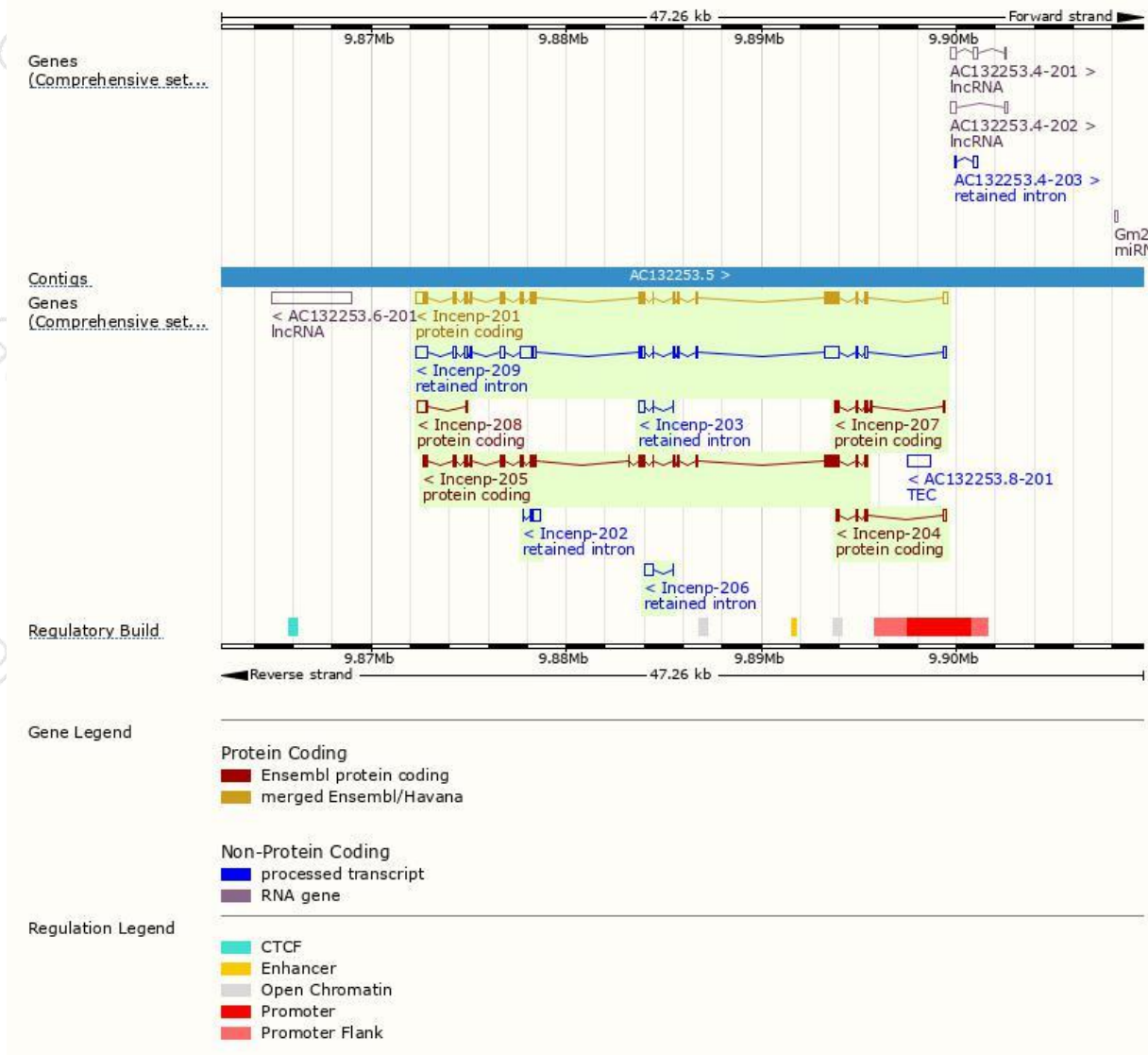
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Incenp-201	ENSMUST00000025562.8	3236	876aa	Protein coding	CCDS37912	Q9WU62	TSL:1 GENCODE basic APPRIS P2
Incenp-205	ENSMUST00000237439.1	2643	880aa	Protein coding	-	-	GENCODE basic APPRIS ALT2
Incenp-207	ENSMUST00000237725.1	637	172aa	Protein coding	-	-	CDS 3' incomplete
Incenp-208	ENSMUST00000238004.1	577	33aa	Protein coding	-	-	CDS 5' incomplete
Incenp-204	ENSMUST00000237147.1	574	138aa	Protein coding	-	-	CDS 3' incomplete
Incenp-209	ENSMUST00000238129.1	3449	No protein	Retained intron	-	-	
Incenp-206	ENSMUST00000237655.1	489	No protein	Retained intron	-	-	
Incenp-202	ENSMUST00000235358.1	478	No protein	Retained intron	-	-	
Incenp-203	ENSMUST00000236533.1	349	No protein	Retained intron	-	-	

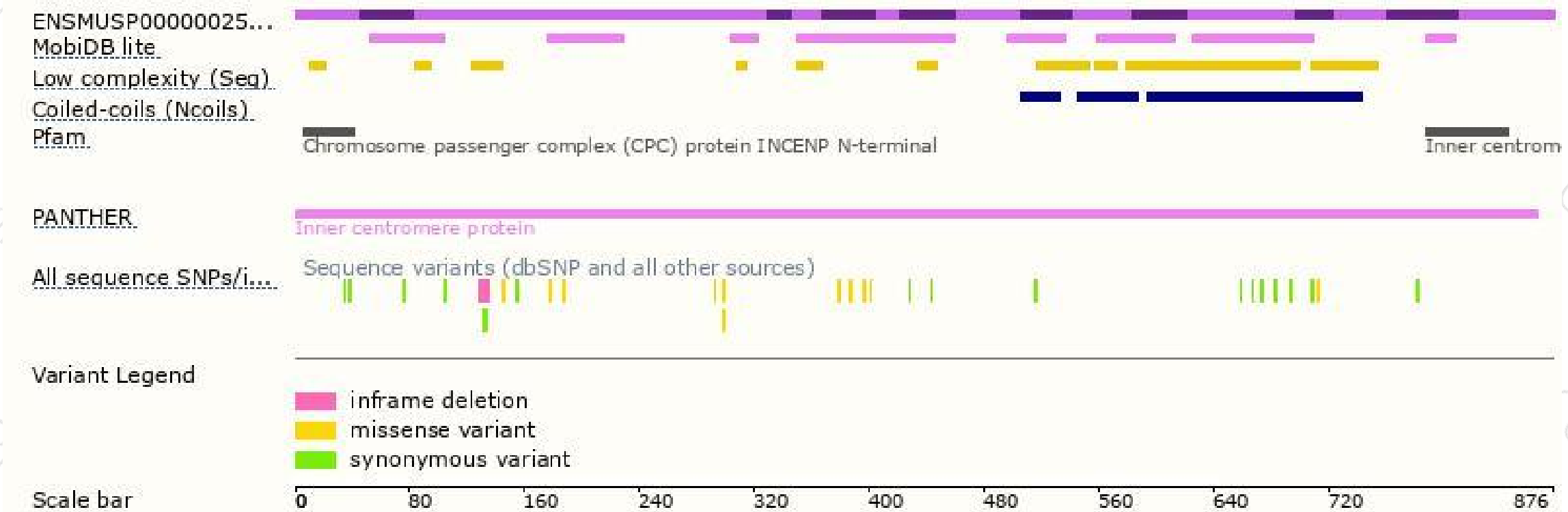
The strategy is based on the design of *Incenp-201* transcript,The transcription is shown below



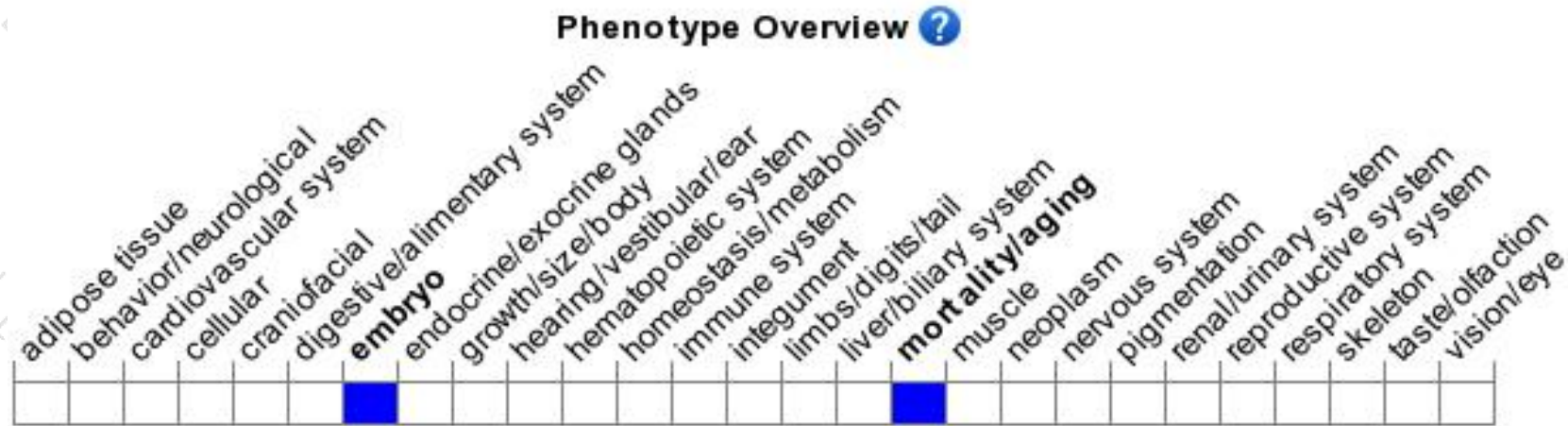
Genomic location distribution



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, Homozygous mutant embryos die before E8.5. Embryonic cells exhibit abnormal nuclei and aberrant mitosis.

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

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