Cntn5 Cas9-KO Strategy

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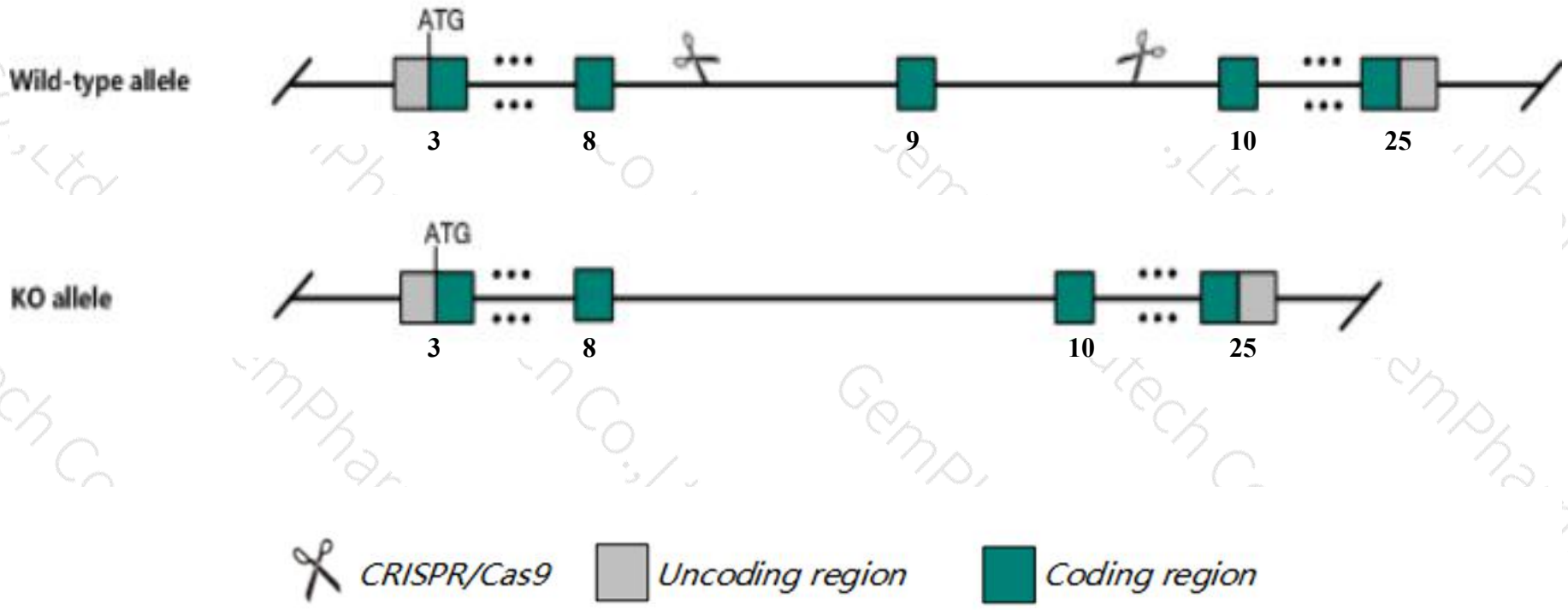
Project Overview

Project Name	***Cntn5***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cntn5* gene. The schematic diagram is as follows:



Technical routes

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- The *Cntn5* gene has 5 transcripts. According to the structure of *Cntn5* gene, exon9 of *Cntn5-202* (ENSMUST00000160216.7) transcript is recommended as the knockout region.The region contains 103bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Cntn5* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,homozygous null mice are viable, fertile, and less susceptible to audiogenic seizures.
- The *Cntn5* 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）

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Cntn5 contactin 5 [*Mus musculus* (house mouse)]

Gene ID: 244682, updated on 13-Mar-2020

Summary

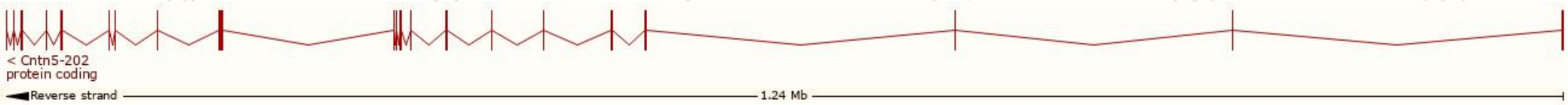
Official Symbol	Cntn5 provided by MGI
Official Full Name	contactin 5 provided by MGI
Primary source	MGI:MGI:3042287
See related	Ensembl:ENSMUSG00000039488
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	NB-2; Gm507; 6720426O10Rik; A830025P08Rik
Expression	Biased expression in CNS E18 (RPKM 1.7), whole brain E14.5 (RPKM 0.8) and 6 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

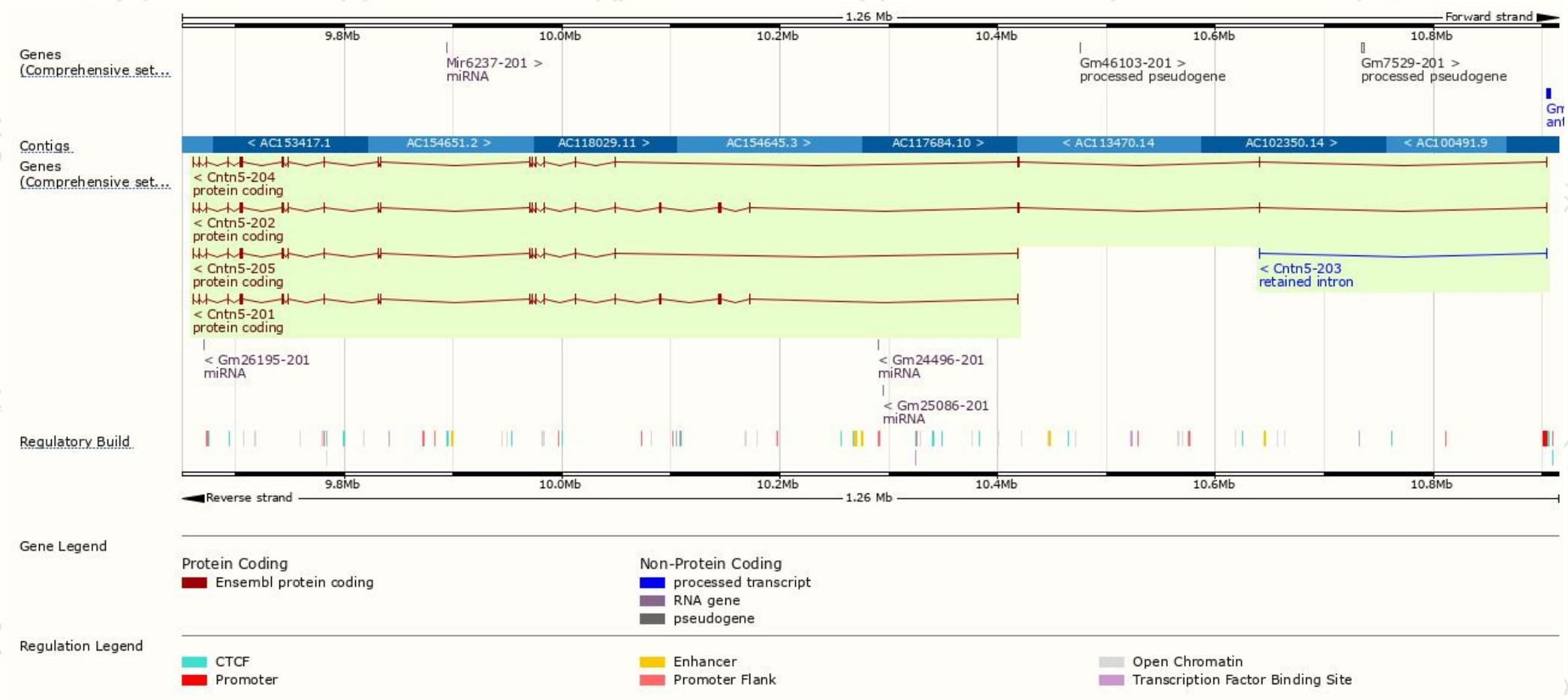
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cntn5-202	ENSMUST00000160216.7	4192	1098aa	Protein coding	CCDS52722	P68500	TSL:5 GENCODE basic APPRIS P1
Cntn5-204	ENSMUST00000162484.7	3606	893aa	Protein coding	CCDS52721	E9PYK7	TSL:1 GENCODE basic
Cntn5-201	ENSMUST00000074133.12	3297	1098aa	Protein coding	CCDS52722	P68500	TSL:5 GENCODE basic APPRIS P1
Cntn5-205	ENSMUST00000179049.1	2682	893aa	Protein coding	CCDS52721	E9PYK7	TSL:5 GENCODE basic
Cntn5-203	ENSMUST00000160358.1	402	No protein	Retained intron	-	-	TSL:3

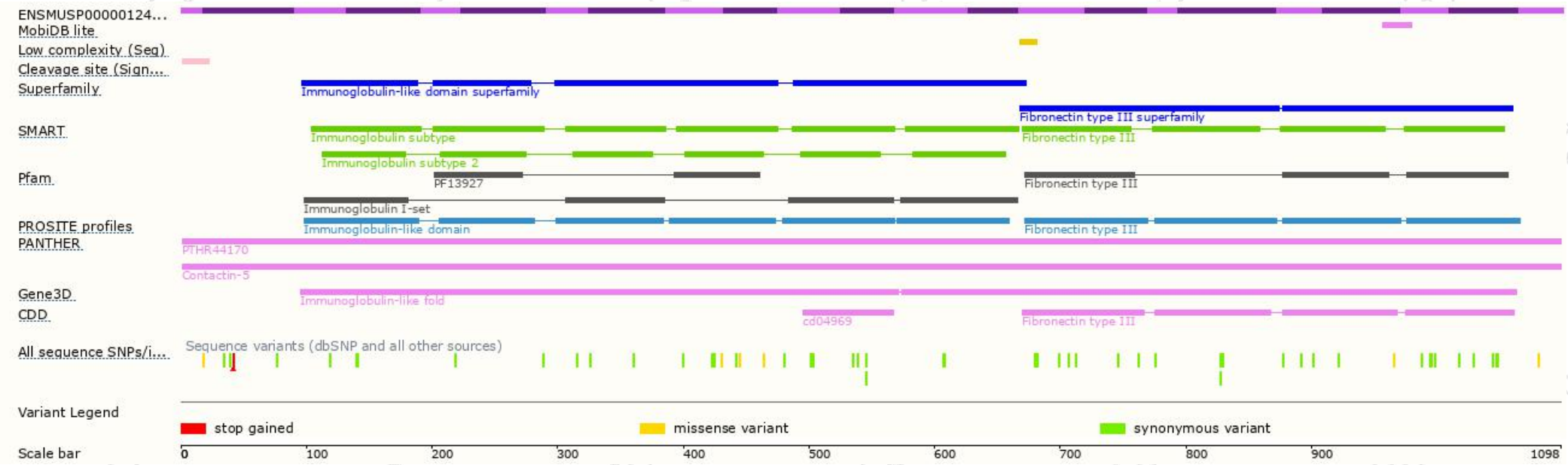
The strategy is based on the design of *Cntn5-202* transcript,the transcription is shown below:



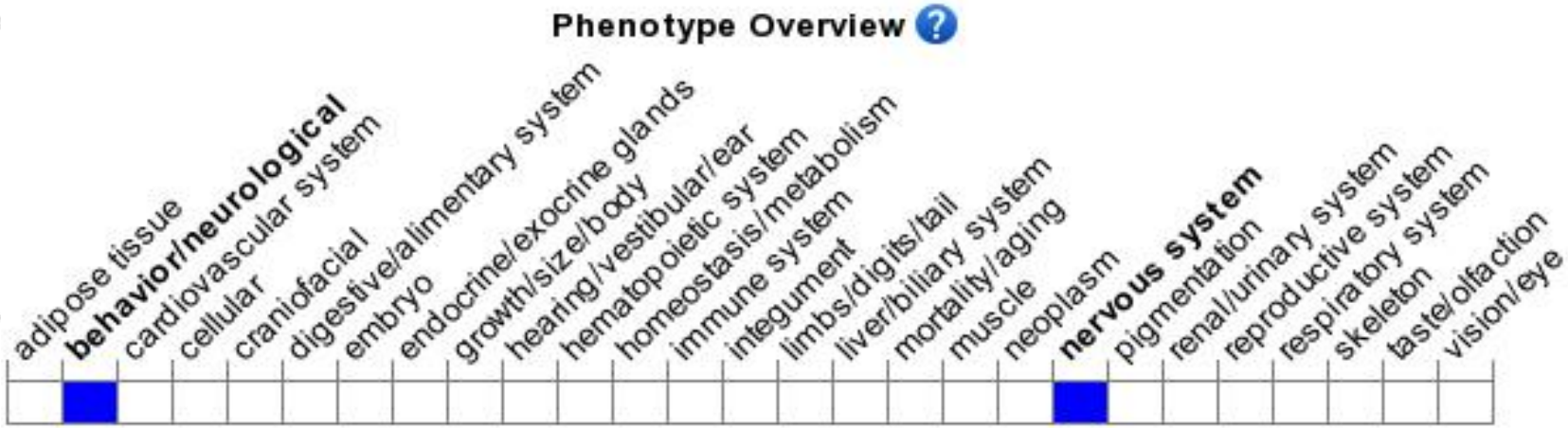
Genomic location distribution



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 null mice are viable, fertile, and less susceptible to audiogenic seizures.

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