

Ror2 Cas9-KO Strategy

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Project Overview

Project Name

Ror2

Project type

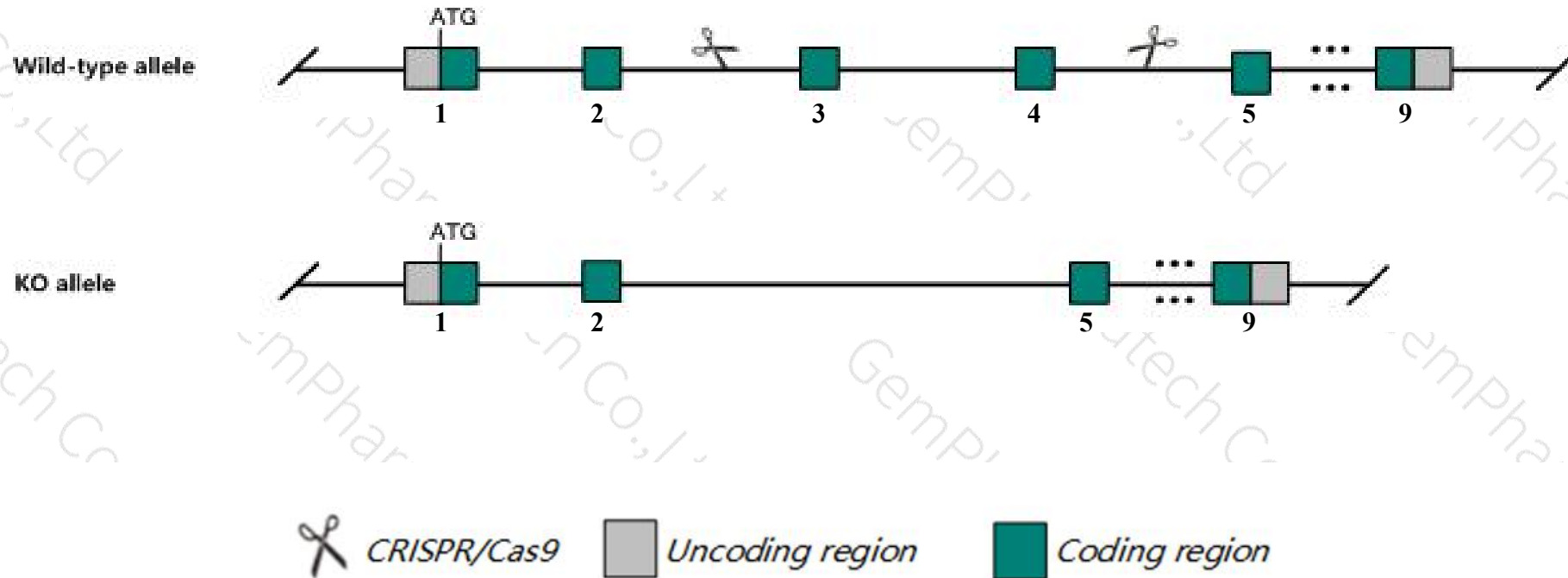
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ror2* gene. The schematic diagram is as follows:



- The *Ror2* gene has 3 transcripts. According to the structure of *Ror2* gene, exon3-exon4 of *Ror2-201* (ENSMUST00000021918.8) transcript is recommended as the knockout region. The region contains 319bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ror2* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for some disruptions in this gene die within the first few hours after birth. They display respiratory and cardiovascular abnormalities as well as a variety of skeletal defects.
- The *Ror2* gene is located on the Chr13. 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)

Ror2 receptor tyrosine kinase-like orphan receptor 2 [Mus musculus (house mouse)]

Gene ID: 26564, updated on 31-Jan-2019

Summary



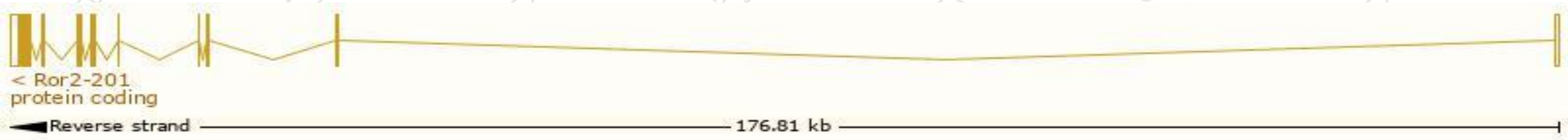
Official Symbol	Ror2 provided by MGI
Official Full Name	receptor tyrosine kinase-like orphan receptor 2 provided by MGI
Primary source	MGI:MGI:1347521
See related	Ensembl:ENSMUSG000000021464
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Ntrkr2
Expression	Broad expression in limb E14.5 (RPKM 13.5), colon adult (RPKM 9.1) and 19 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

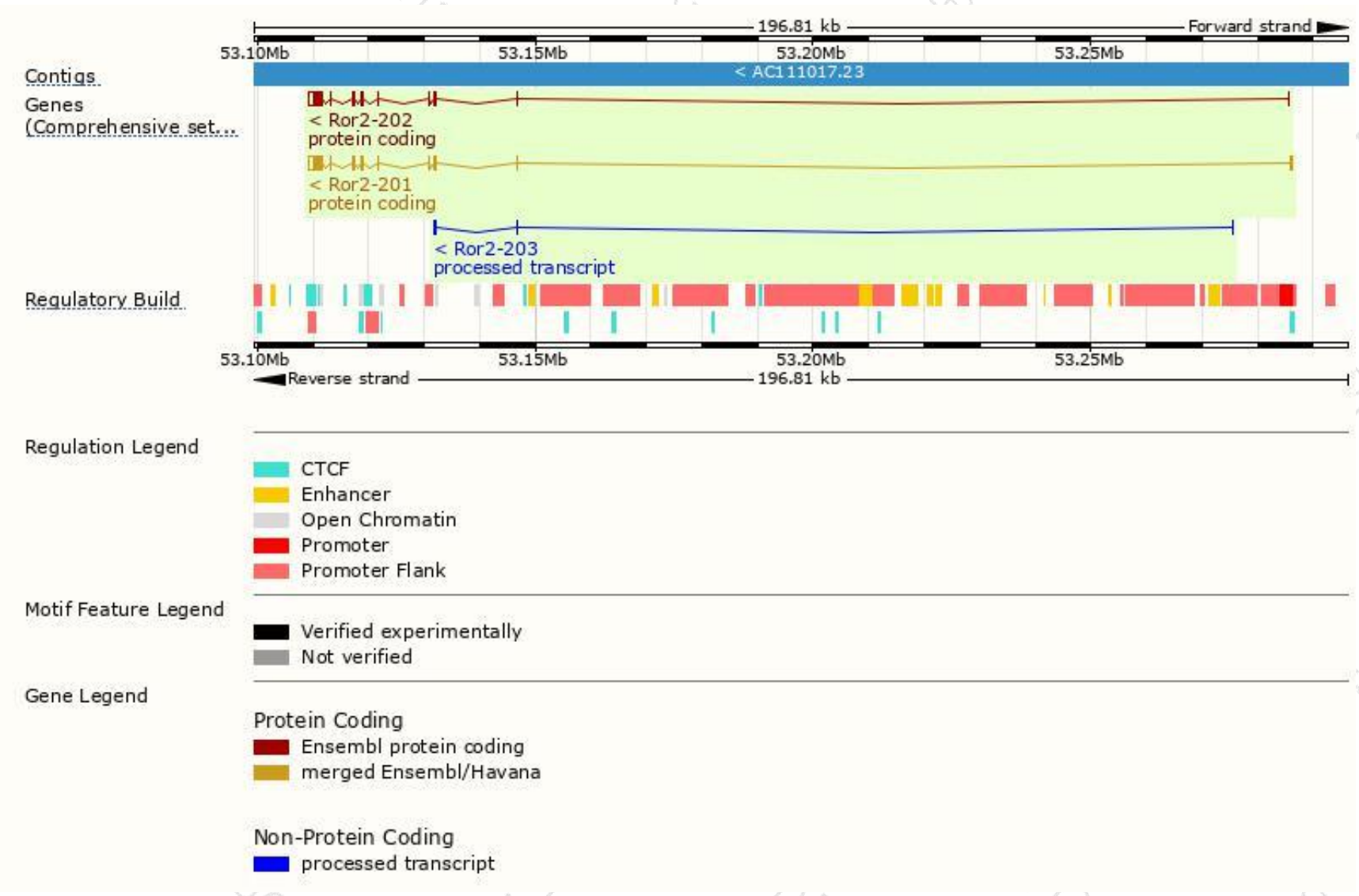
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ror2-201	ENSMUST00000021918.8	3985	944aa	Protein coding	CCDS26520	Q9Z138	TSL:1 GENCODE basic APPRIS P2
Ror2-202	ENSMUST00000130235.7	3730	932aa	Protein coding	-	E9PUN5	TSL:1 GENCODE basic APPRIS ALT2
Ror2-203	ENSMUST00000149299.1	324	No protein	Processed transcript	-	-	TSL:5

The strategy is based on the design of *Ror2-201* transcript,The transcription is shown below



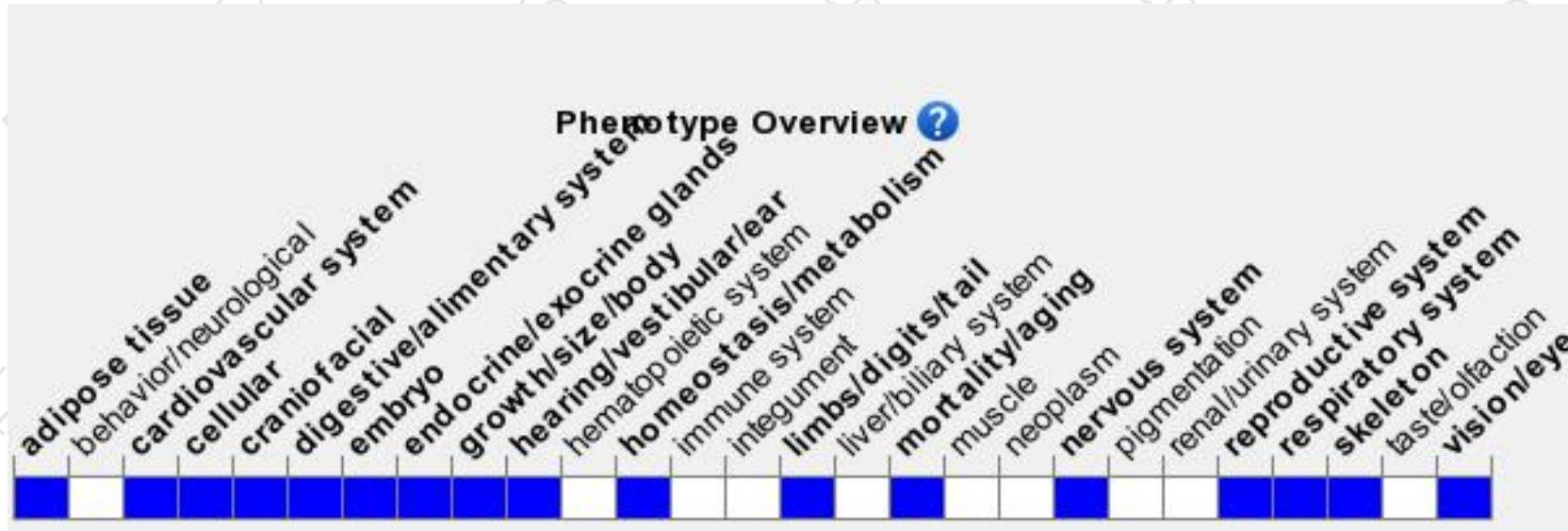
Genomic location distribution



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 some disruptions in this gene die within the first few hours after birth. They display respiratory and cardiovascular abnormalities as well as a variety of skeletal defects.

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

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