Rnf145 Cas9-KO Strategy

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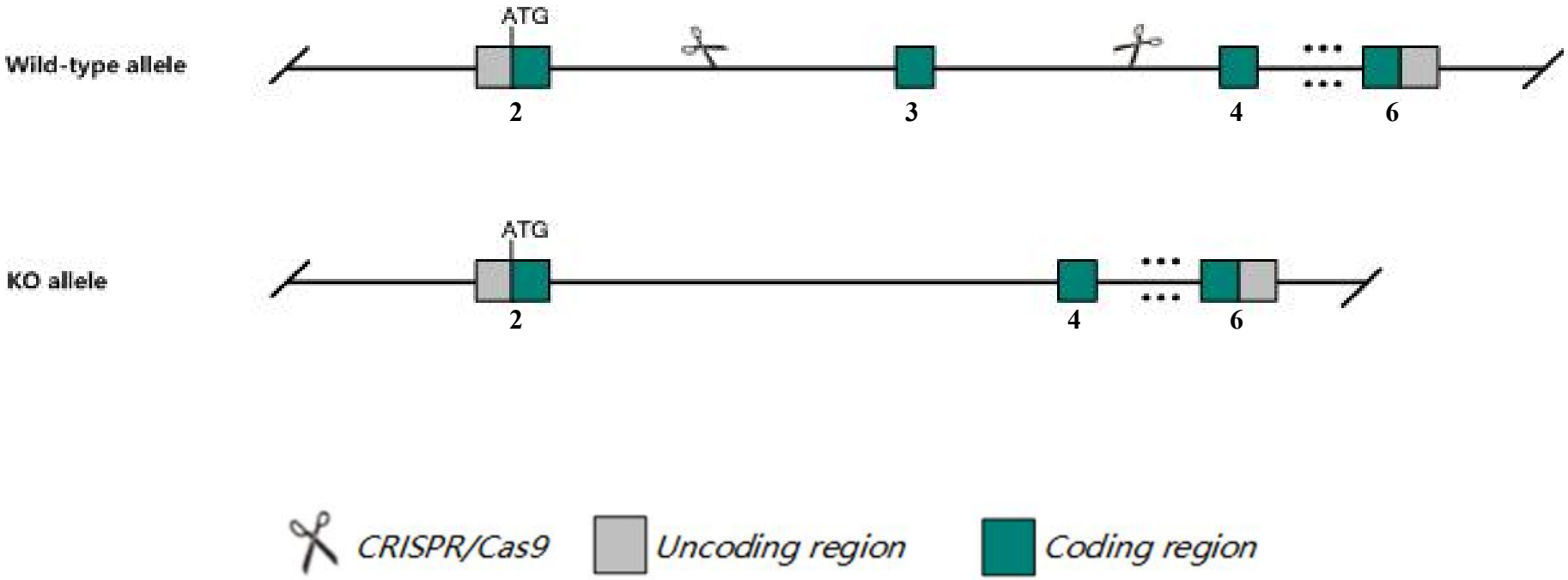
Project Overview

Project Name	***Rnf145***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rnf145* gene. The schematic diagram is as follows:



Technical routes

The *Rnf145* gene has 6 transcripts. According to the structure of *Rnf145* gene, exon3 of *Rnf145-201* (ENSMUST00000019333.9) transcript is recommended as the knockout region.The region contains 109bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Rnf145* gene. The brief process is as follows: CRISPR/Cas9 systen

Notice

The *Rnf145* gene is located on the Chr11. 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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Rnf145 ring finger protein 145 [Mus musculus (house mouse)]

Gene ID: 74315, updated on 2-Apr-2019

Summary

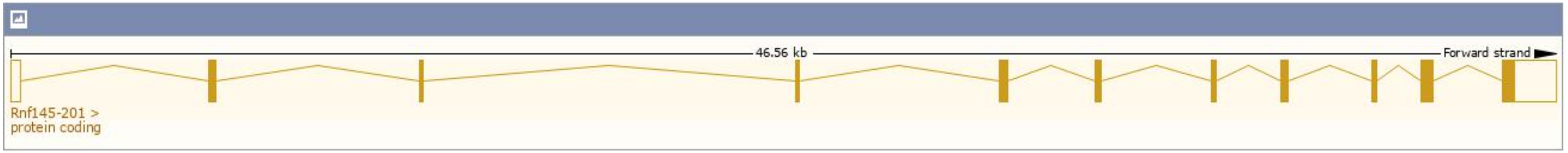
Official Symbol	Rnf145 provided by MGI
Official Full Name	ring finger protein 145 provided by MGI
Primary source	MGI:MGI:1921565
See related	Ensembl:ENSMUSG00000019189
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	3732413I11Rik, TMRF1
Expression	Ubiquitous expression in thymus adult (RPKM 28.4), CNS E11.5 (RPKM 19.9) and 28 other tissues See more
Orthologs	human all

Transcript information Ensembl

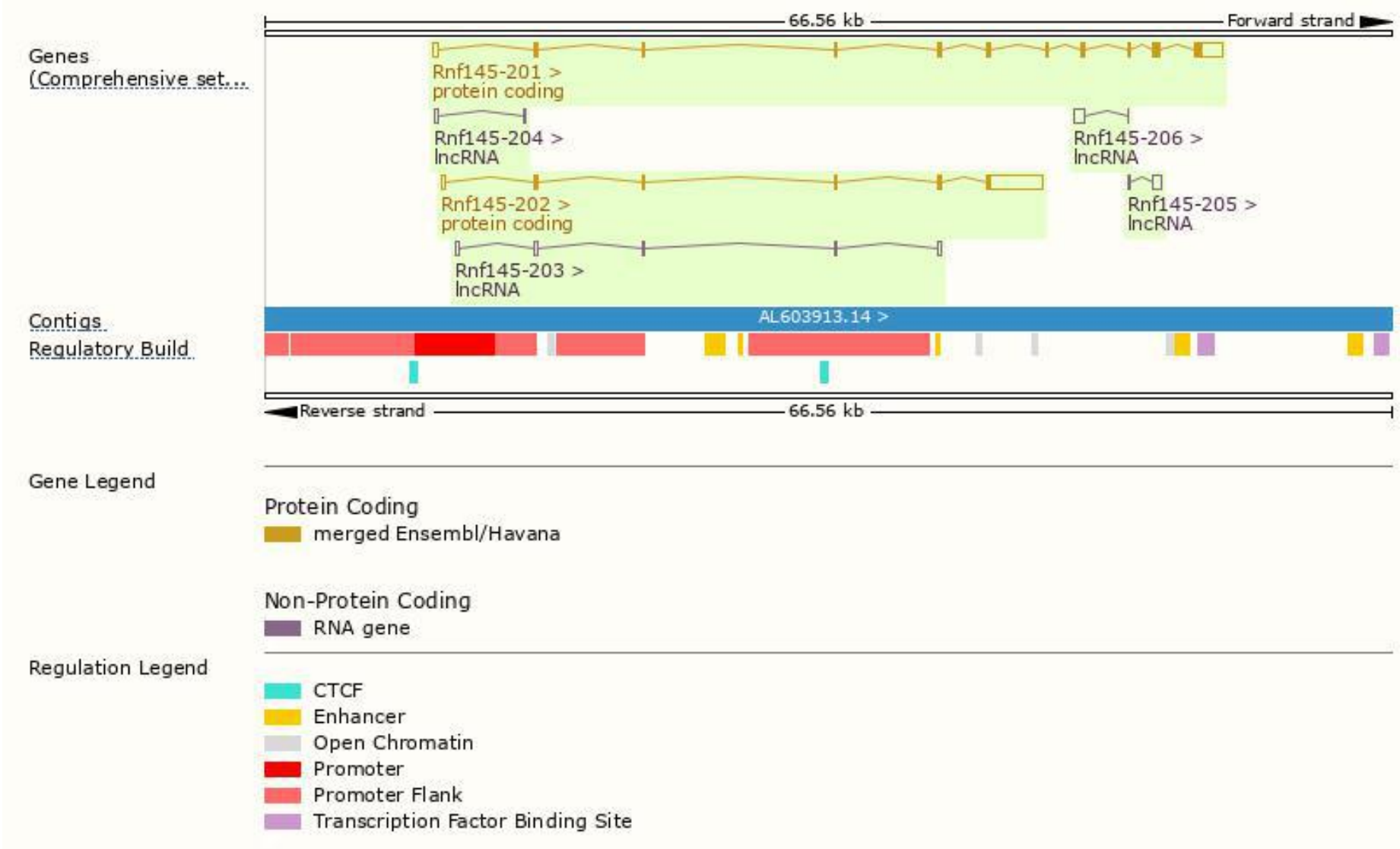
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rnf145-202	ENSMUST00000101327.2	4214	266aa	Protein coding	CCDS48775	Q8BU61	TSL:1 GENCODE basic
Rnf145-201	ENSMUST00000019333.9	3570	663aa	Protein coding	CCDS24565	Q5SWK7	TSL:1 GENCODE basic APPRIS P1
Rnf145-203	ENSMUST00000124959.1	773	No protein	lncRNA	-	-	TSL:3
Rnf145-206	ENSMUST00000150257.1	674	No protein	lncRNA	-	-	TSL:5
Rnf145-205	ENSMUST00000129676.1	614	No protein	lncRNA	-	-	TSL:2
Rnf145-204	ENSMUST00000127907.1	348	No protein	lncRNA	-	-	TSL:3

The strategy is based on the design of *Rnf145-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain

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