Hrasls Cas9-KO Strategy

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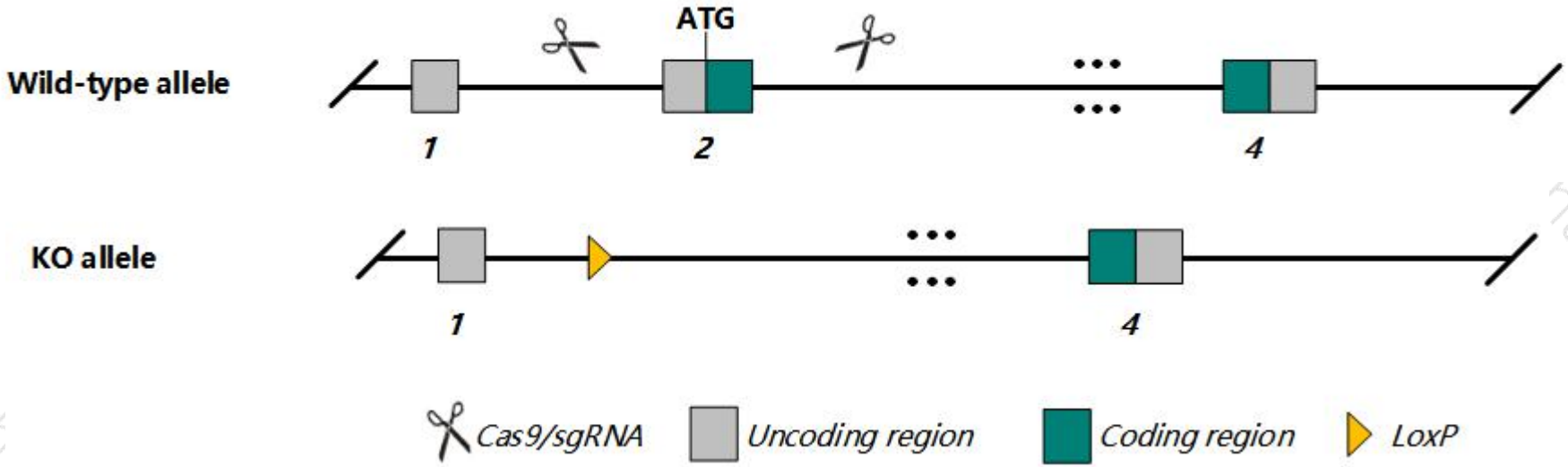
Project Overview

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

Knockout strategy

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



Technical routes

➢ The *Hrasls* gene has 4 transcripts. According to the structure of *Hrasls* gene, exon2 of *Hrasls-201* (ENSMUST00000089824.10) transcript is recommended as the knockout region.The region contains start codon ATG. Knock out the region will result in disruption of protein function.

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

Notice

➢ The *Hrasls* gene is located on the Chr16. 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information（NCBI）

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Hrasls HRAS-like suppressor [Mus musculus (house mouse)]

Gene ID: 27281, updated on 31-Jan-2019

Summary

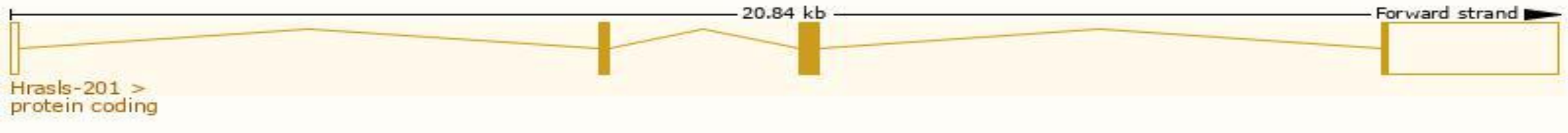
Official Symbol	Hrasls provided by MGI
Official Full Name	HRAS-like suppressor provided byMGI
Primary source	MGI:MGI:1351473
See related	Ensembl:ENSMUSG00000022525
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2810012B06Rik, A-C1, HRSL1, Hrasrs
Expression	Biased expression in testis adult (RPKM 44.5), heart adult (RPKM 3.7) and 2 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

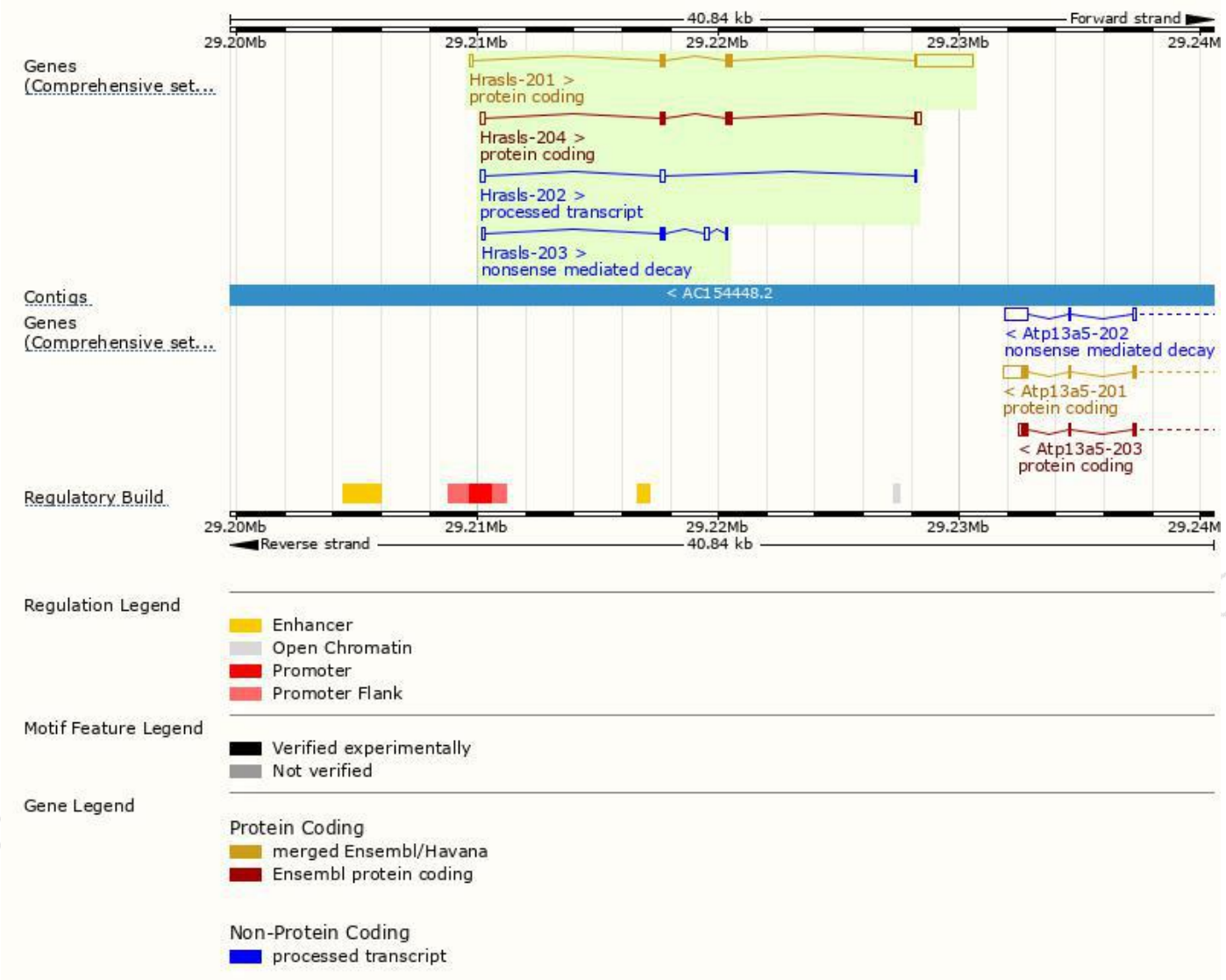
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hrasls-201	ENSMUST00000089824.10	2916	167aa	Protein coding	CCDS28094	A0A0R4J130	TSL:1 GENCODE basic APPRIS P1
Hrasls-204	ENSMUST00000162747.7	854	167aa	Protein coding	CCDS28094	A0A0R4J130	TSL:1 GENCODE basic APPRIS P1
Hrasls-203	ENSMUST00000161294.1	478	50aa	Nonsense mediated decay	-	E0CYE9	TSL:3
Hrasls-202	ENSMUST00000160794.1	412	No protein	Processed transcript	-	-	TSL:2

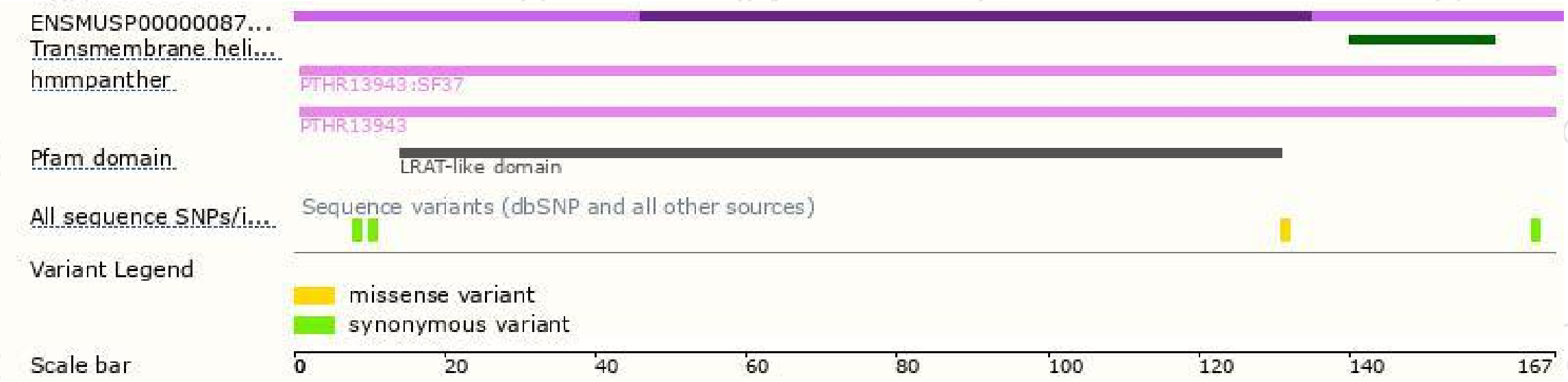
The strategy is based on the design of *Hrasls-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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