

***Rsad1* Cas9-KO Strategy**

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Design Date: 2020-4-28

Project Overview

Project Name

Rsad1

Project type

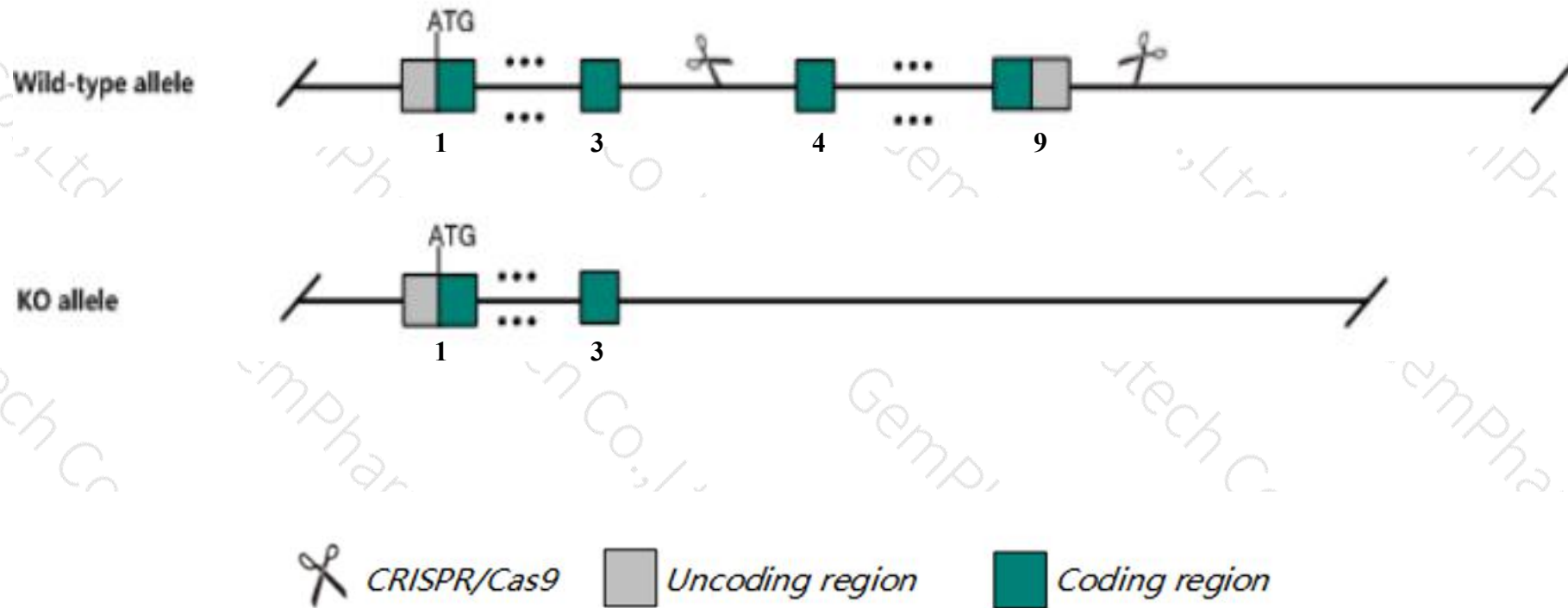
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rsad1* gene. The schematic diagram is as follows:



- The *Rsad1* gene has 4 transcripts. According to the structure of *Rsad1* gene, exon4-exon9 of *Rsad1-201* (ENSMUST00000040487.3) transcript is recommended as the knockout region. The region contains most of coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rsad1* gene. The brief process is as follows: CRISPR/Cas9 system w

- The *Rsad1* 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)

Rsad1 radical S-adenosyl methionine domain containing 1 [*Mus musculus* (house mouse)]

Gene ID: 237926, updated on 14-Apr-2020

Summary

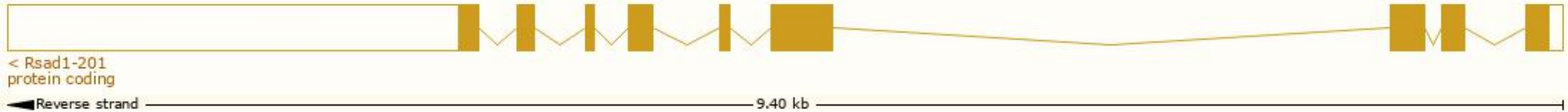
Official Symbol	Rsad1 provided by MGI
Official Full Name	radical S-adenosyl methionine domain containing 1 provided by MGI
Primary source	MGI:MGI:3039628
See related	Ensembl:ENSMUSG00000039096
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BC056485; B430319G23
Expression	Ubiquitous expression in ovary adult (RPKM 8.0), adrenal adult (RPKM 7.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

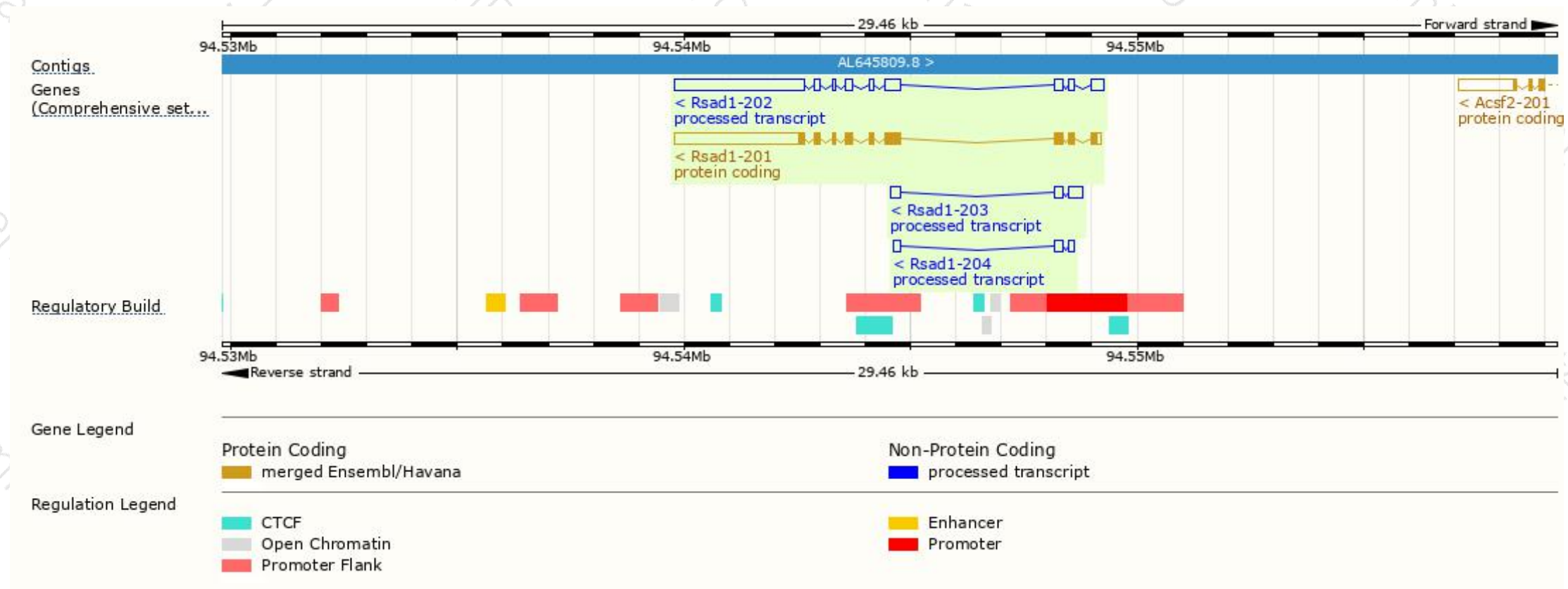
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rsad1-201	ENSMUST00000040487.3	4143	442aa	Protein coding	CCDS25258	Q5SUV1	TSL:1 GENCODE basic APPRIS P1
Rsad1-202	ENSMUST00000132274.7	4203	No protein	Processed transcript	-	-	TSL:1
Rsad1-203	ENSMUST00000143299.1	743	No protein	Processed transcript	-	-	TSL:3
Rsad1-204	ENSMUST00000148888.1	469	No protein	Processed transcript	-	-	TSL:3

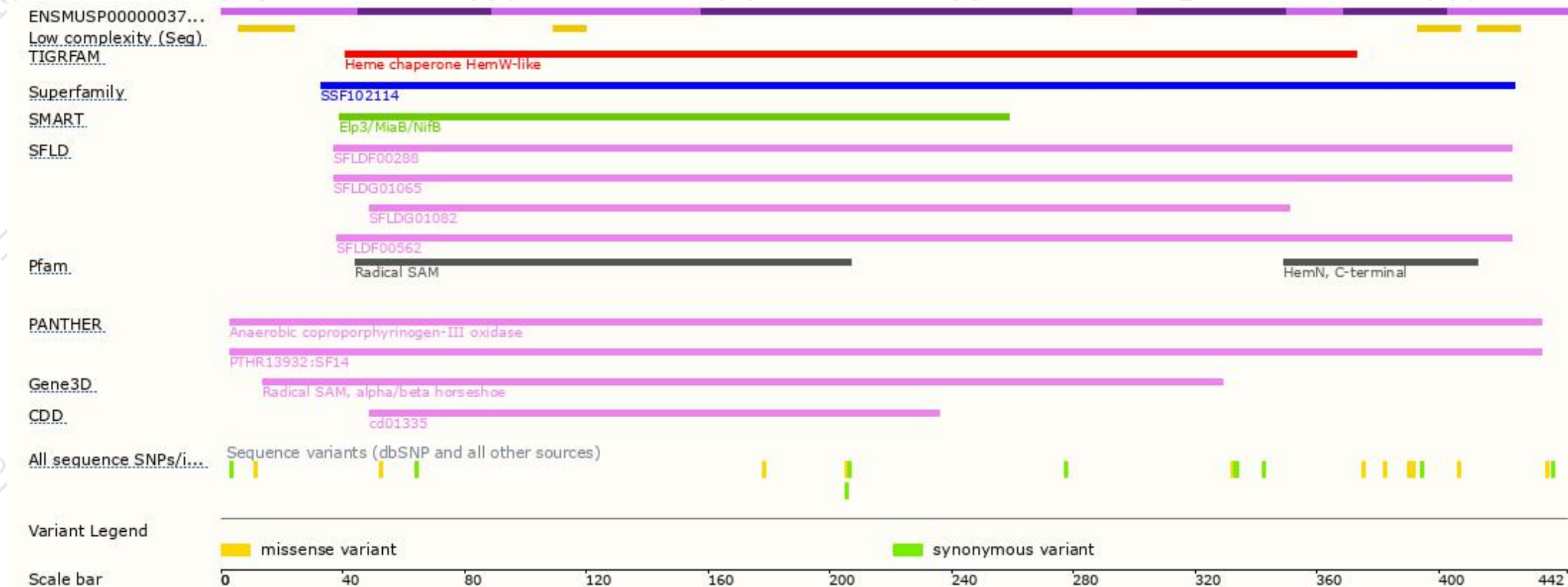
The strategy is based on the design of *Rsad1-201* transcript, the transcription is shown below



Genomic location distribution

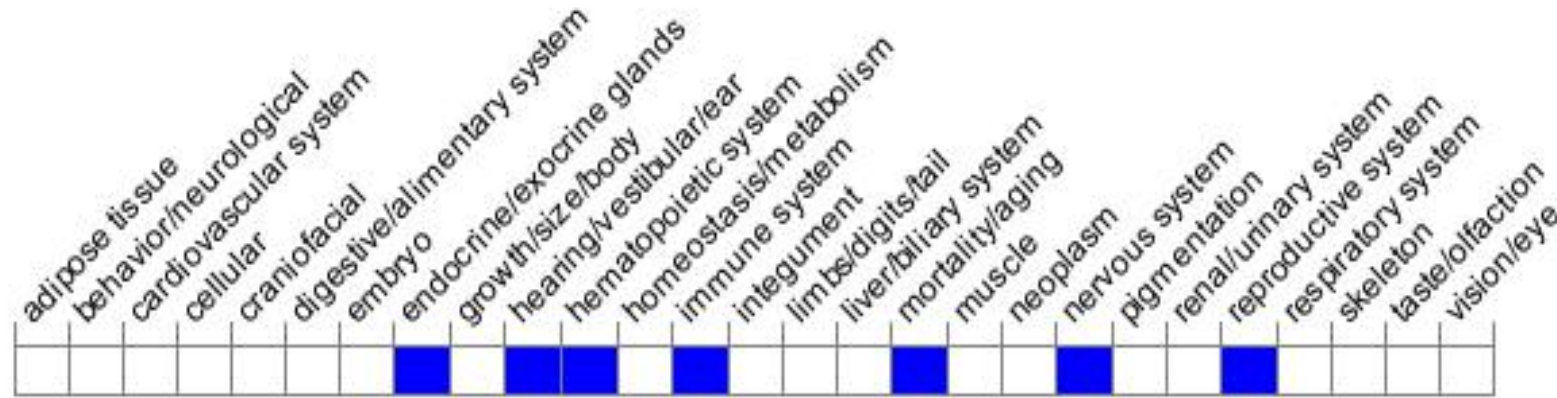


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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