Adat2 Cas9-KO Strategy

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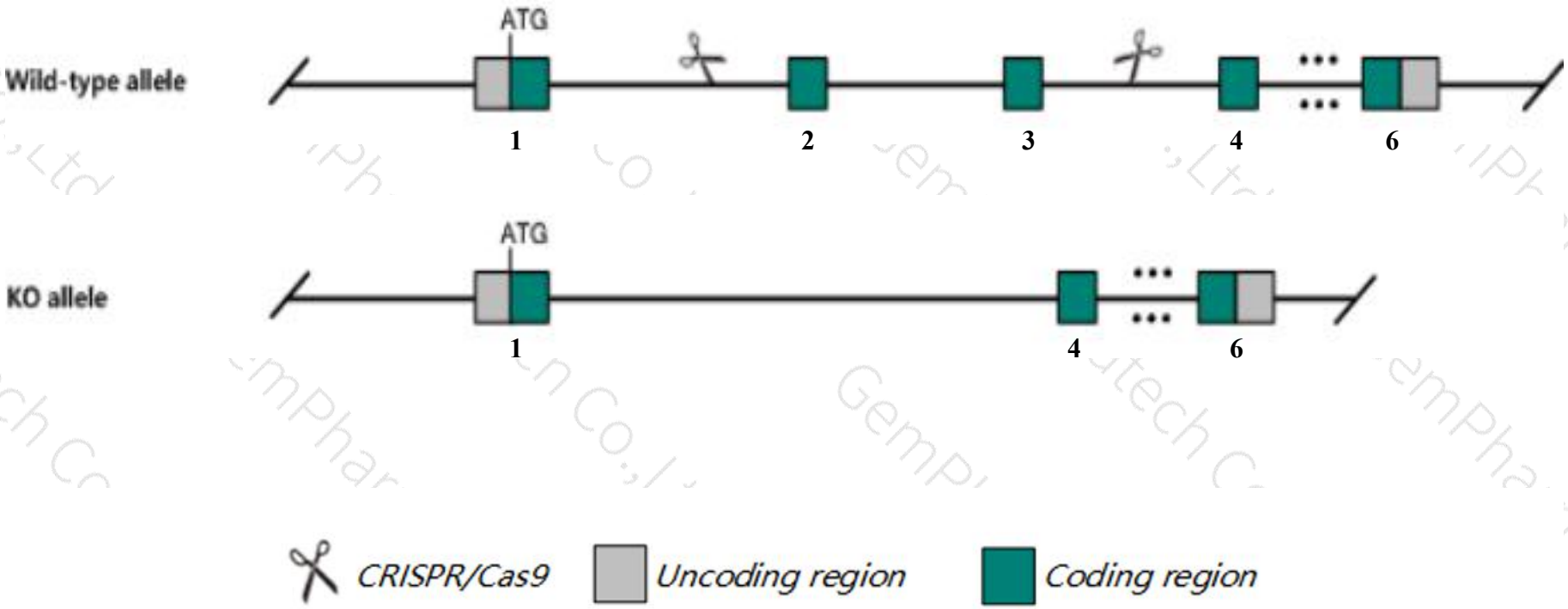
Project Overview

Project Name	***Adat2***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adat2* gene. The schematic diagram is as follows:



Technical routes

➢ The *Adat2* gene has 1 transcript. According to the structure of *Adat2* gene, exon2-exon3 of *Adat2-201* (ENSMUST00000019944.8) transcript is recommended as the knockout region.The region contains 256bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Adat2* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- The knockout region is near to the N-terminal of *Pex3* gene,this strategy may influence the regulatory function of the N-terminal of *Pex3* gene.

- The *Adat2* gene is located on the Chr10. 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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Adat2 adenosine deaminase, tRNA-specific 2 [Mus musculus (house mouse)]

Gene ID: 66757, updated on 13-Mar-2020

Summary

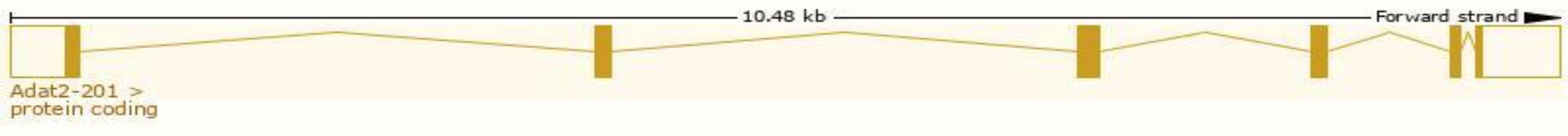
Official Symbol	Adat2 provided by MGI
Official Full Name	adenosine deaminase, tRNA-specific 2 provided by MGI
Primary source	MGI:MGI:1914007
See related	Ensembl:ENSMUSG00000019808
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4933426M09Rik, Deadc1
Expression	Ubiquitous expression in testis adult (RPKM 16.0), CNS E11.5 (RPKM 4.4) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

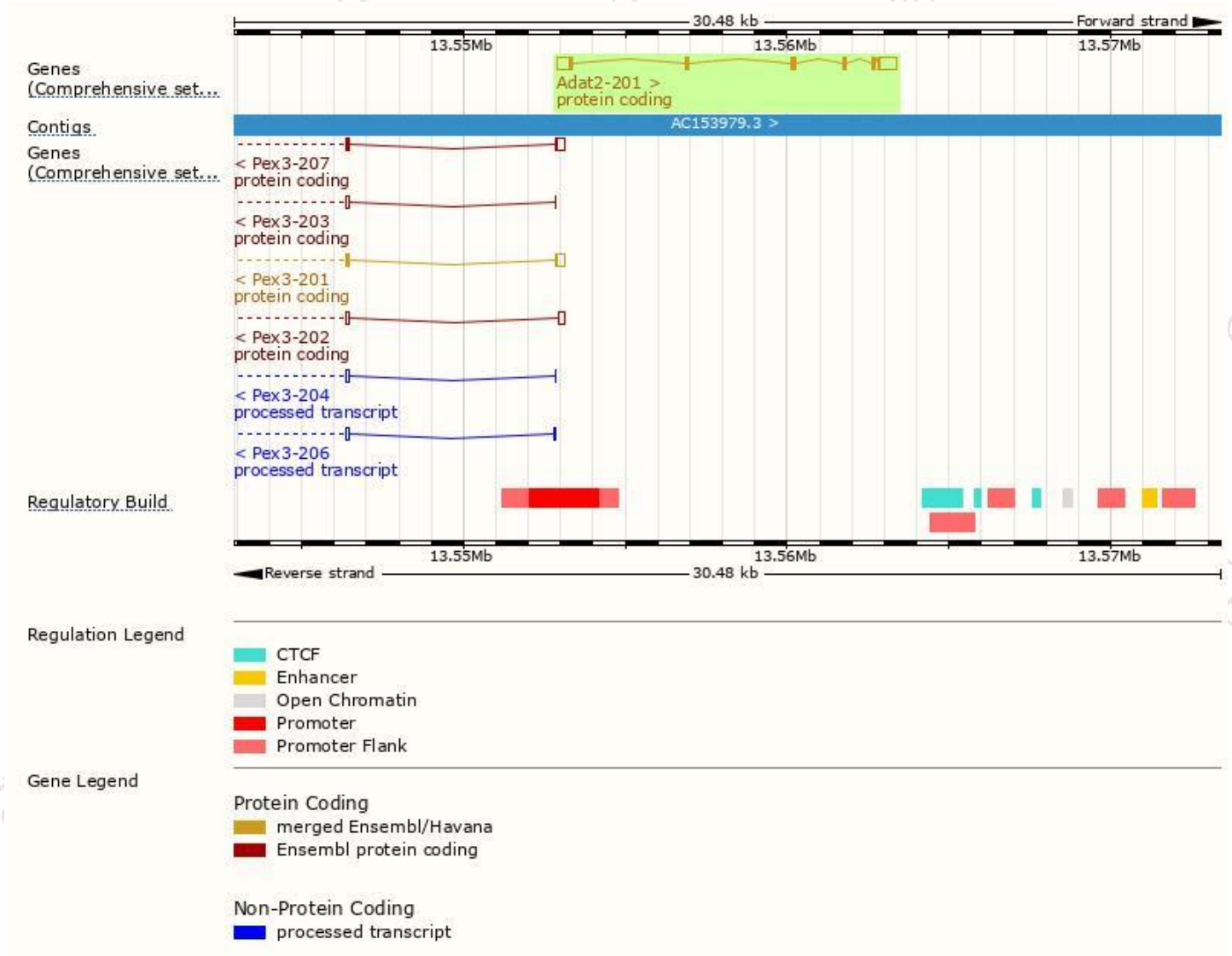
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adat2-201	ENSMUST00000019944.8	1466	191aa	Protein coding	CCDS35847	Q6P6J0	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P1

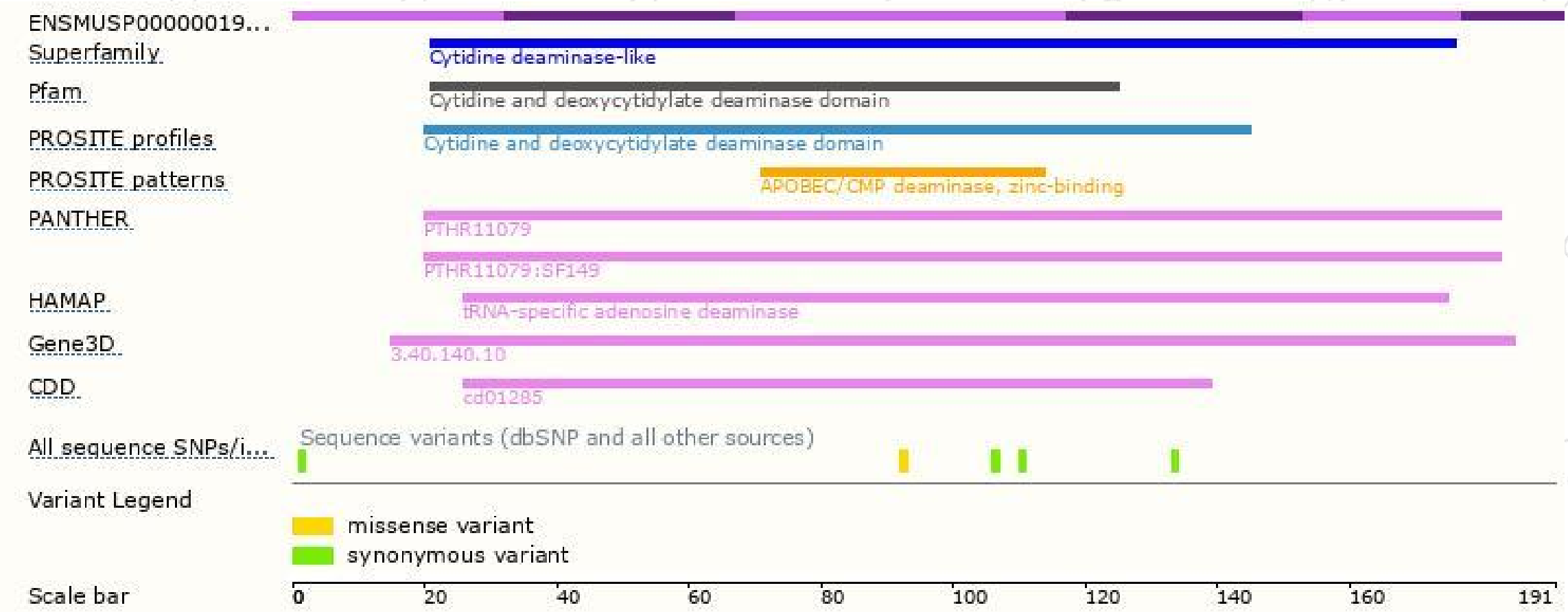
The strategy is based on the design of *Adat2-201* transcript,the transcription is shown below



Genomic location distribution



Protein domain



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

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