Ammecr1 Cas9-KO Strategy

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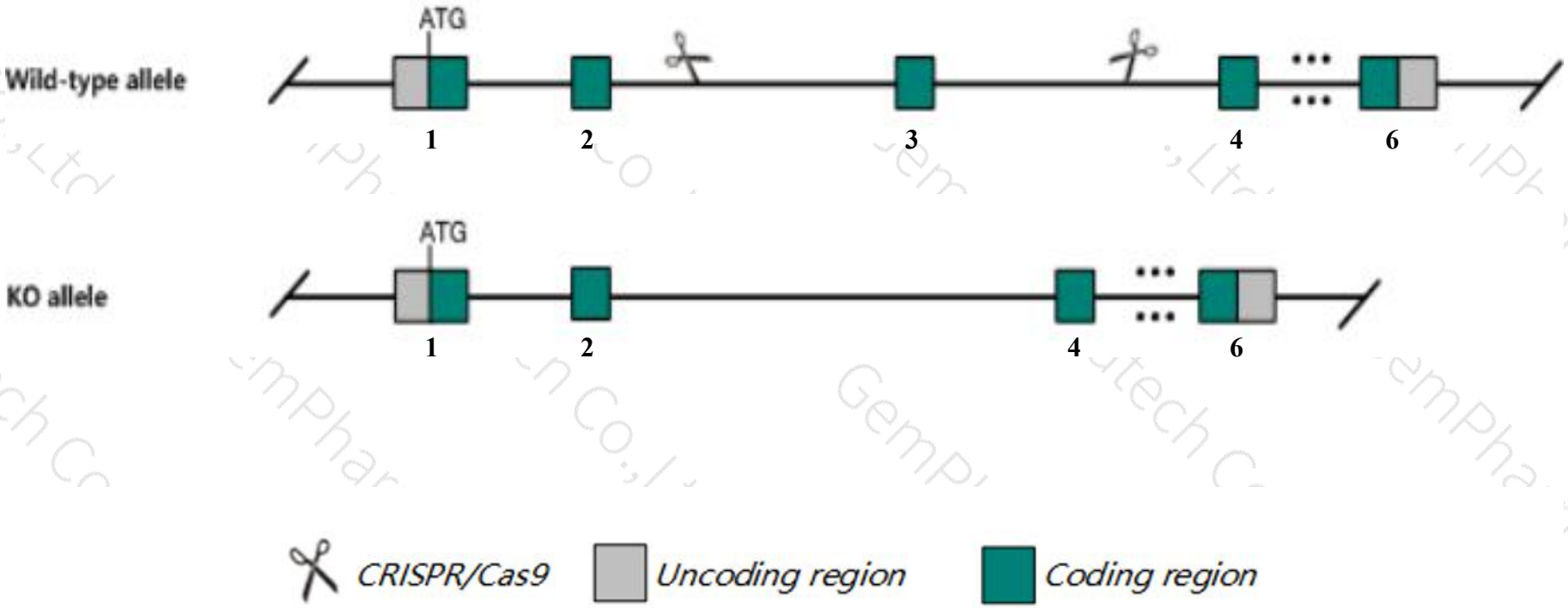
Design Date: 2020-9-16

Project Overview

Project Name	***Ammecr1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ammecr1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Ammecr1* gene has 1 transcript. According to the structure of *Ammecr1* gene, exon3 of *Ammecr1-201*(ENSMUST00000041317.2) transcript is recommended as the knockout region.The region contains 115bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Ammecr1* gene. The brief process is as follows: gRNA was transcribed in vitro.Cas9 and gRNA were microinjected into the fertilized eggs of C57BL/6JGpt mice.Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.

Notice

➢ According to the existing MGI data,male chimeras hemizygous for a gene trapped allele appear normal at E9.5.

➢ The N-terminal of *Ammecr1* gene will remain several amino acids, it may remain the partial function of *Ammecr1* gene.

➢ The *Ammecr1* gene is located on the ChrX. 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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Ammecr1 Alport syndrome, mental retardation, midface hypoplasia and elliptocytosis chromosomal region gene 1 [Mus musculus (house mouse)]

Gene ID: 56068, updated on 13-Mar-2020

Summary

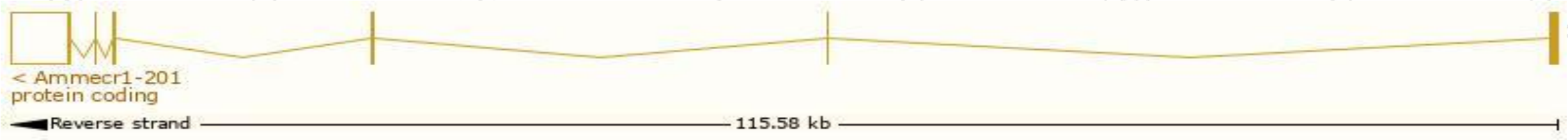
Official Symbol	Ammecr1 provided by MGI
Official Full Name	Alport syndrome, mental retardation, midface hypoplasia and elliptocytosis chromosomal region gene 1 provided byMGI
Primary source	MGI:MGI:1860206
See related	Ensembl:ENSMUSG00000042225
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	6230420G18Rik
Expression	Ubiquitous expression in liver E14 (RPKM 3.7), liver E14.5 (RPKM 3.0) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

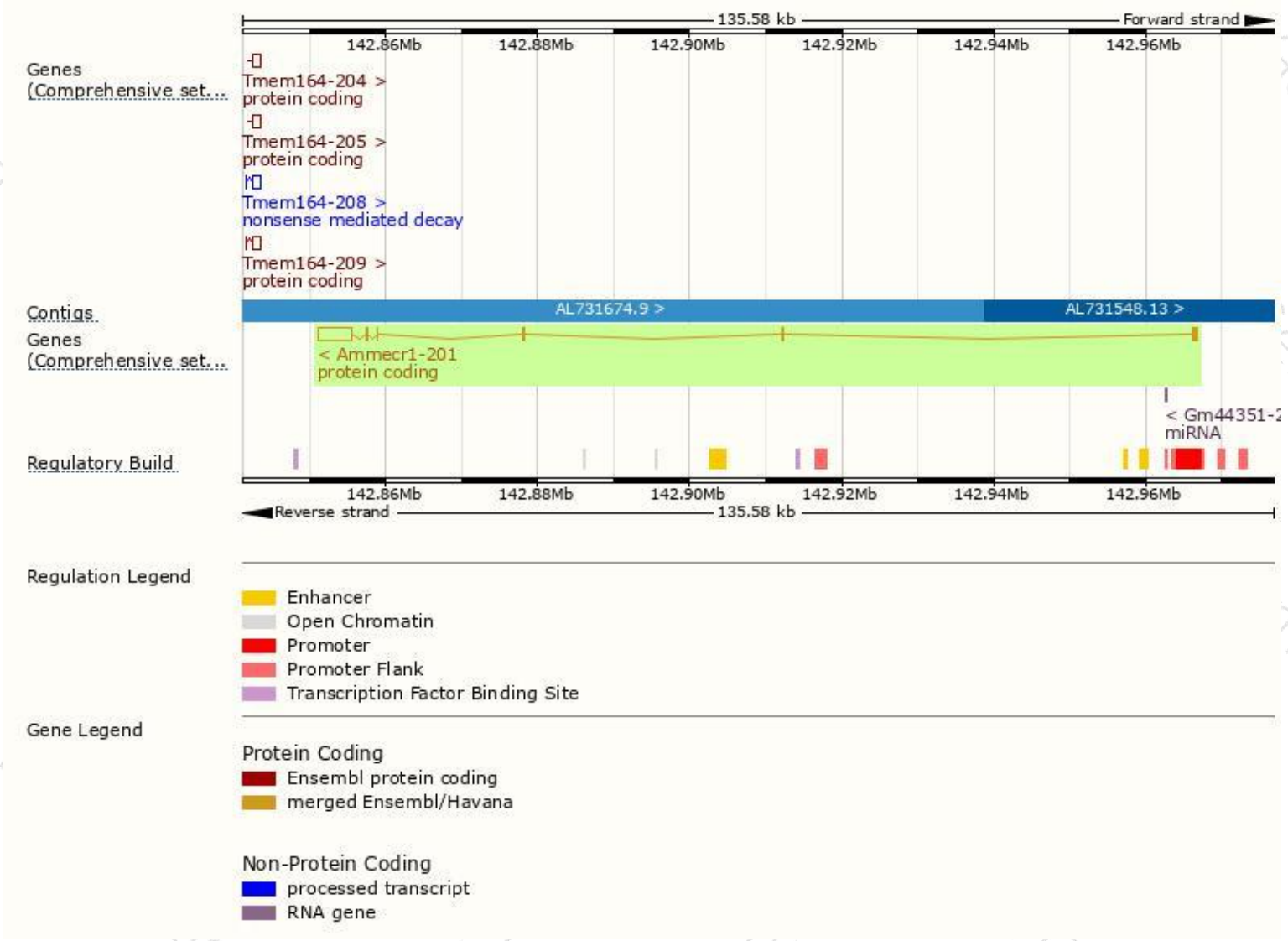
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ammecr1-201	ENSMUST00000041317.2	5437	344aa	Protein coding	CCDS30452	Q9JHT5	TSL:1 GENCODE basic APPRIS P1

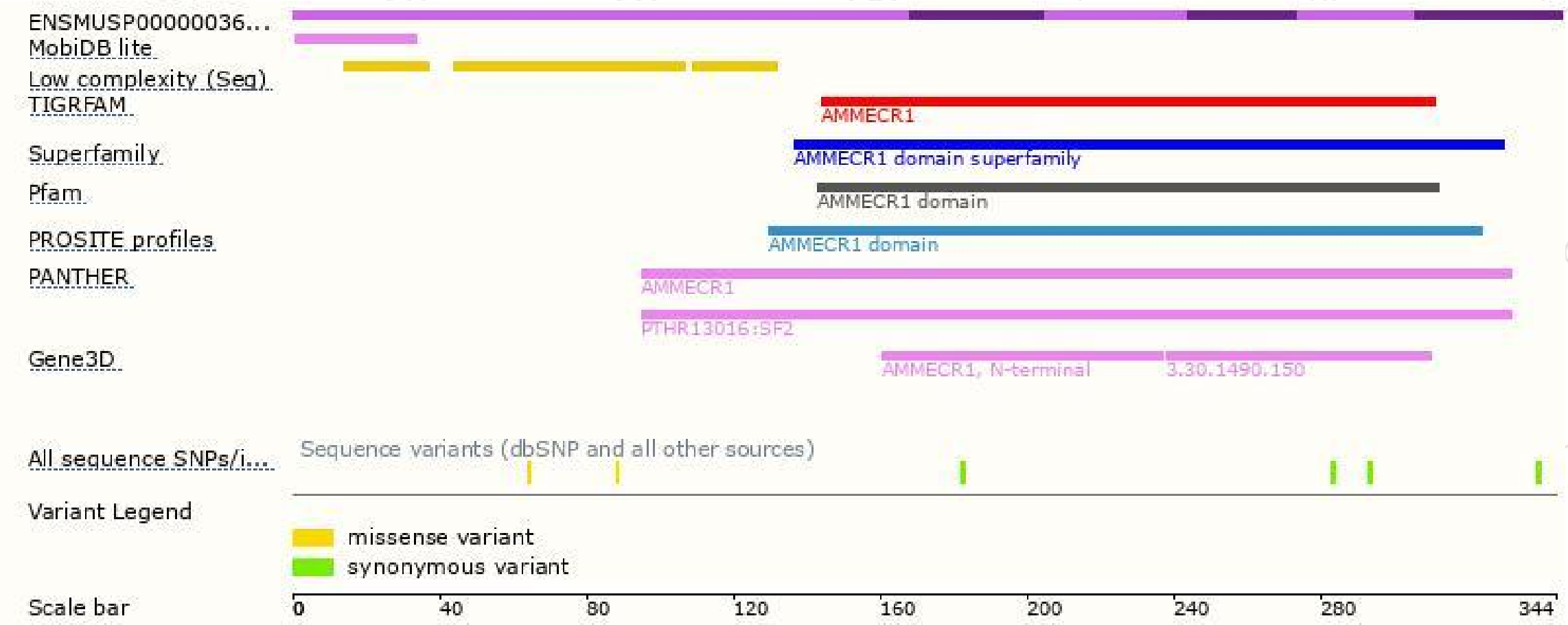
The strategy is based on the design of *Ammecr1-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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