Vmn1r215 Cas9-KO Strategy

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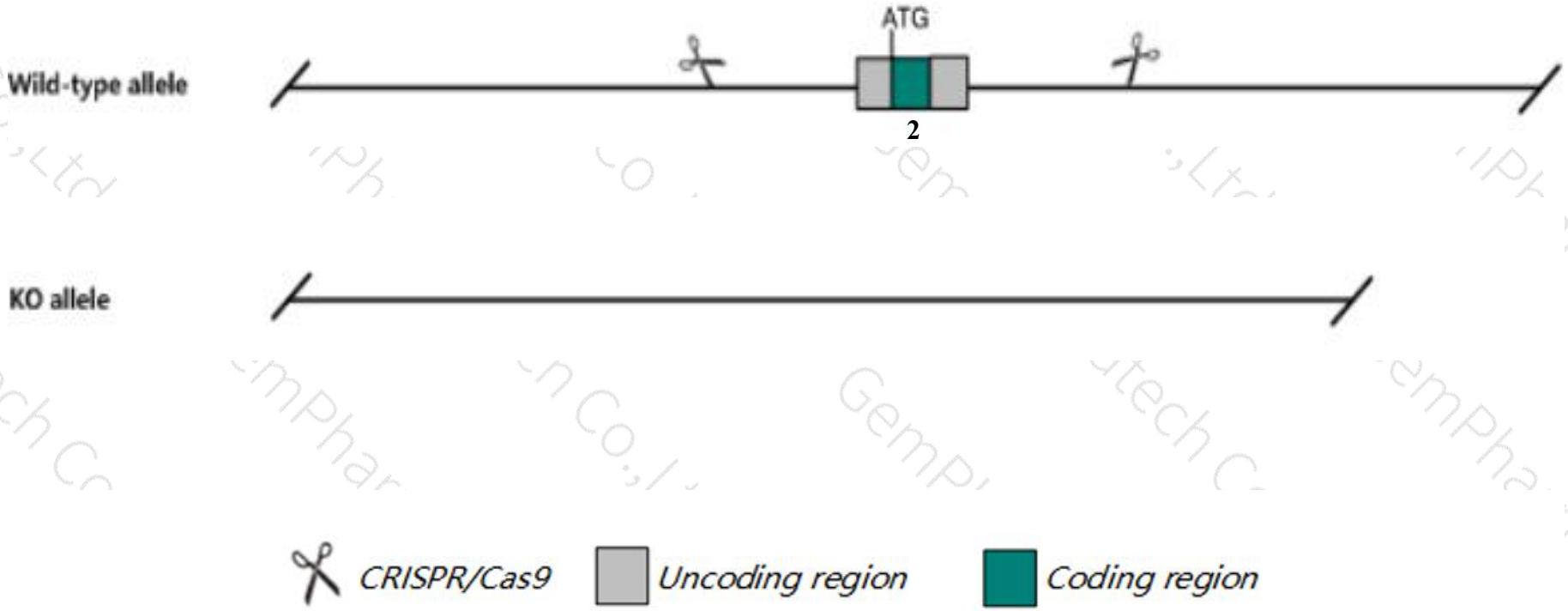
Project Overview

Project Name	***Vmn1r215***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vmn1r215* gene. The schematic diagram is as follows:



Technical routes

➢ The *Vmn1r215* gene has 2 transcripts. According to the structure of *Vmn1r215* gene, exon2 of *Vmn1r215-202*(ENSMUST00000228092.1) transcript is recommended as the knockout region.The region contains all of the coding sequence.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Vmn1r215* gene. The brief process is as follows: CRISPR/Cas9 system 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

➢ The *Vmn1r215* gene is located on the Chr13. 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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Vmn1r215 vomeronasal 1 receptor 215 [Mus musculus (house mouse)]

Gene ID: 171253, updated on 13-Mar-2020

Summary

Official Symbol	Vmn1r215 provided by MGI
Official Full Name	vomeronasal 1 receptor 215 provided byMGI
Primary source	MGI:MGI:2159687
See related	Ensembl:ENSMUSG00000099917
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	V1ri2

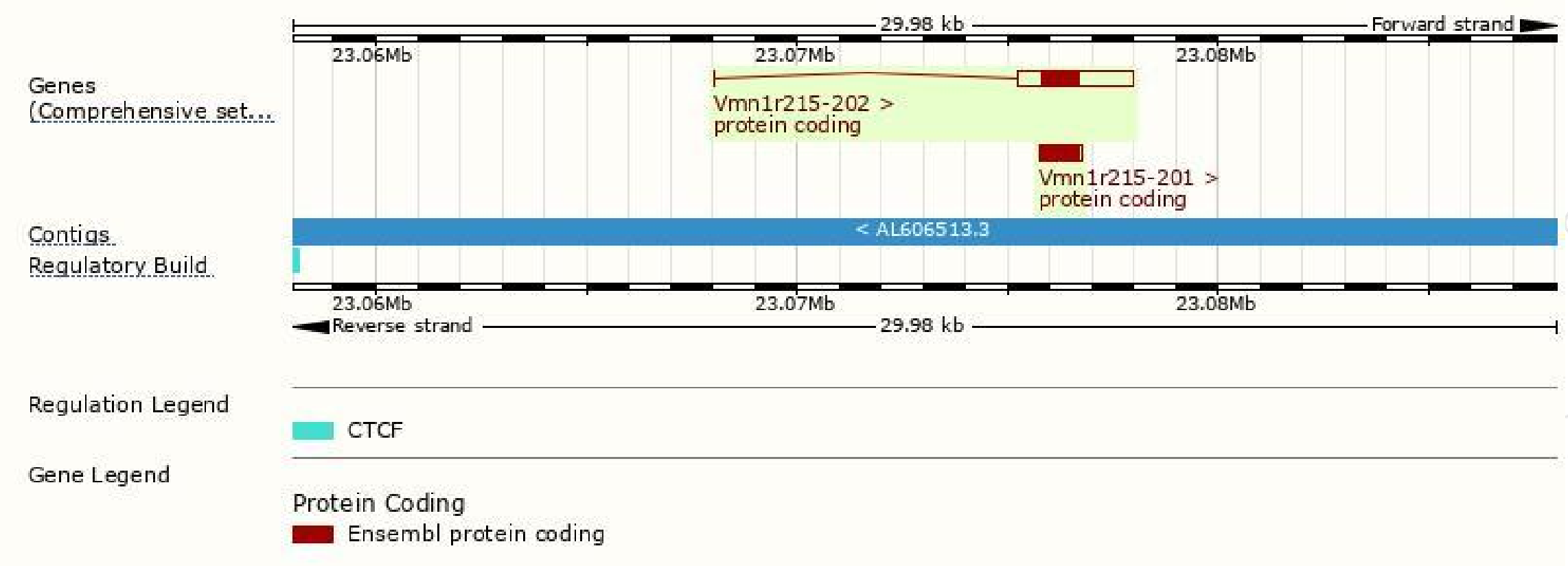
Transcript information（Ensembl）

The gene has 2 transcripts,all transcripts are shown below:

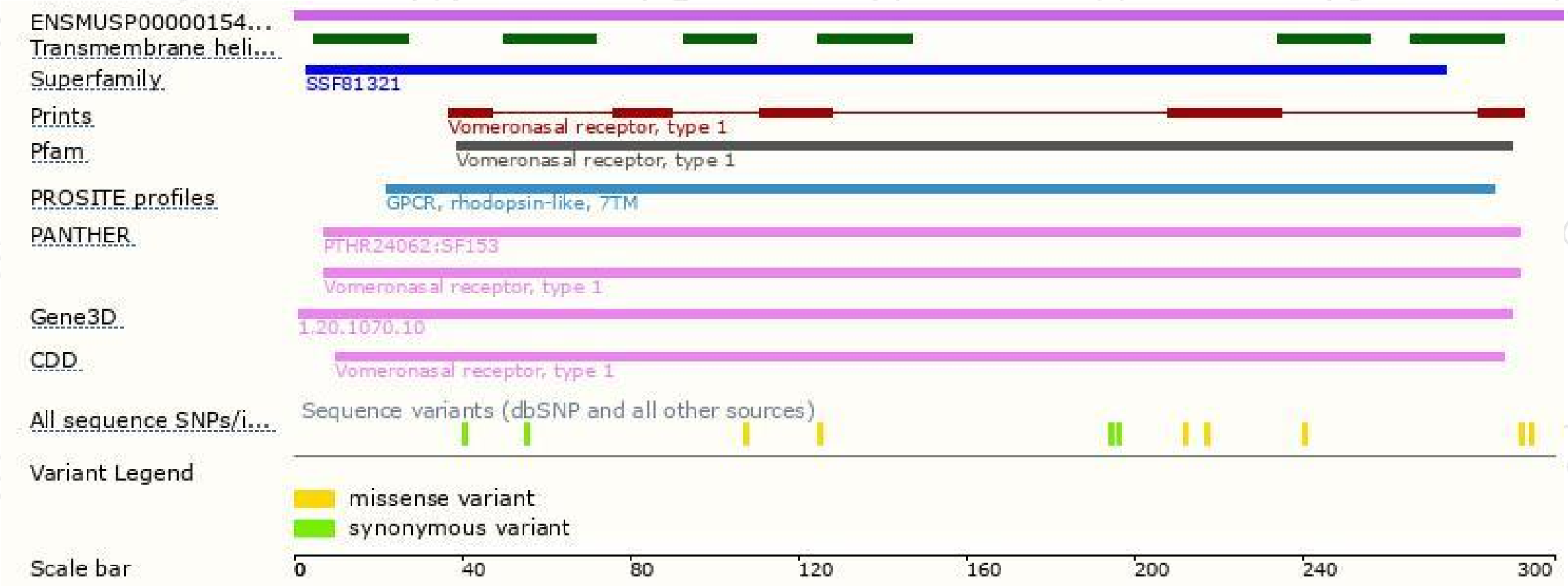
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Vmn1r215-202	ENSMUST00000228092.1	2790	300aa	Protein coding	CCDS26330	Q8R264	GENCODE basic APPRIS P1
Vmn1r215-201	ENSMUST00000072972.4	1048	300aa	Protein coding	CCDS26330	Q8R264	TSL:NA GENCODE basic APPRIS P1

The strategy is based on the design of *Vmn1r215-202* 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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