

Gpr153 Cas9-KO Strategy

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Project Overview

Project Name

Gpr153

Project type

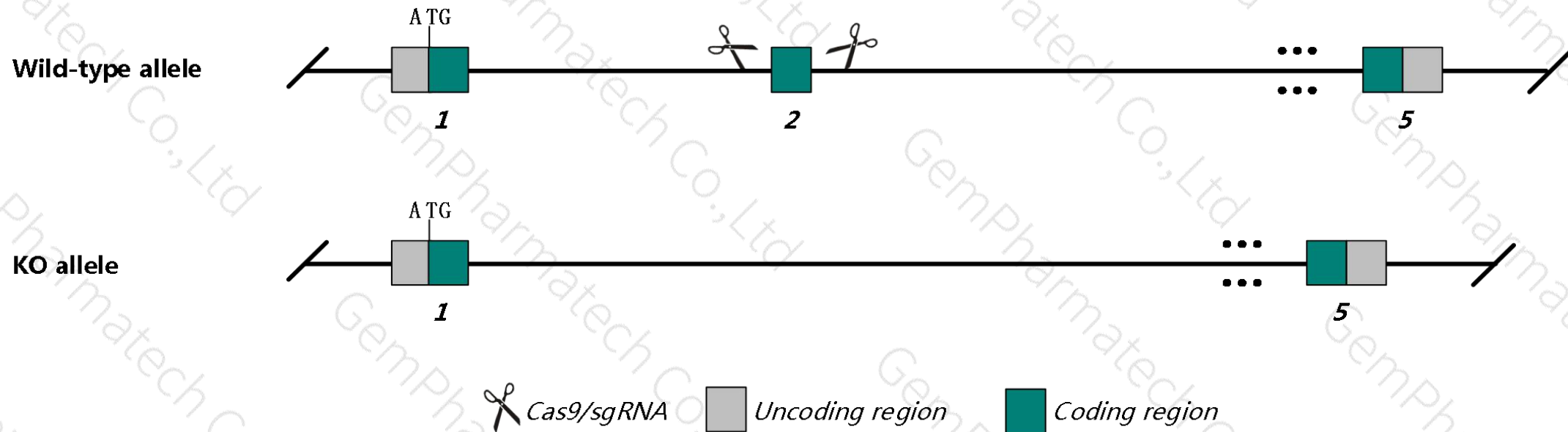
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpr153* gene. The schematic diagram is as follows:



Technical routes

- The *Gpr153* gene has 4 transcripts. According to the structure of *Gpr153* gene, exon2 of *Gpr153-201* ([ENSMUST00000055754.7](#)) transcript is recommended as the knockout region. The region contains 430bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gpr153* 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.

- The *Gpr153* gene is located on the Chr4. 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)

Gpr153 G protein-coupled receptor 153 [*Mus musculus* (house mouse)]

Gene ID: 100129, updated on 31-Jan-2019

Summary

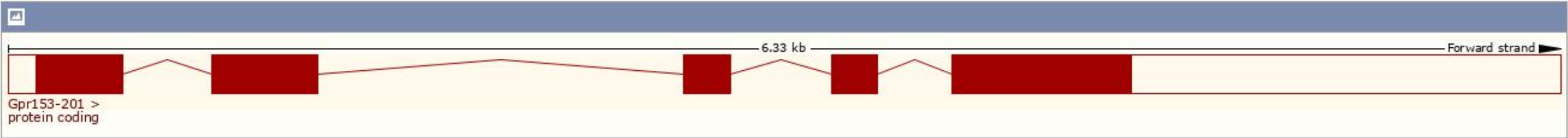
Official Symbol	Gpr153 provided by MGI
Official Full Name	G protein-coupled receptor 153 provided by MGI
Primary source	MGI:MGI:1916157
See related	Ensembl:ENSMUSG00000042804
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	PGR1; AI449320; 1110065N12Rik
Expression	Broad expression in ovary adult (RPKM 45.3), mammary gland adult (RPKM 24.8) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

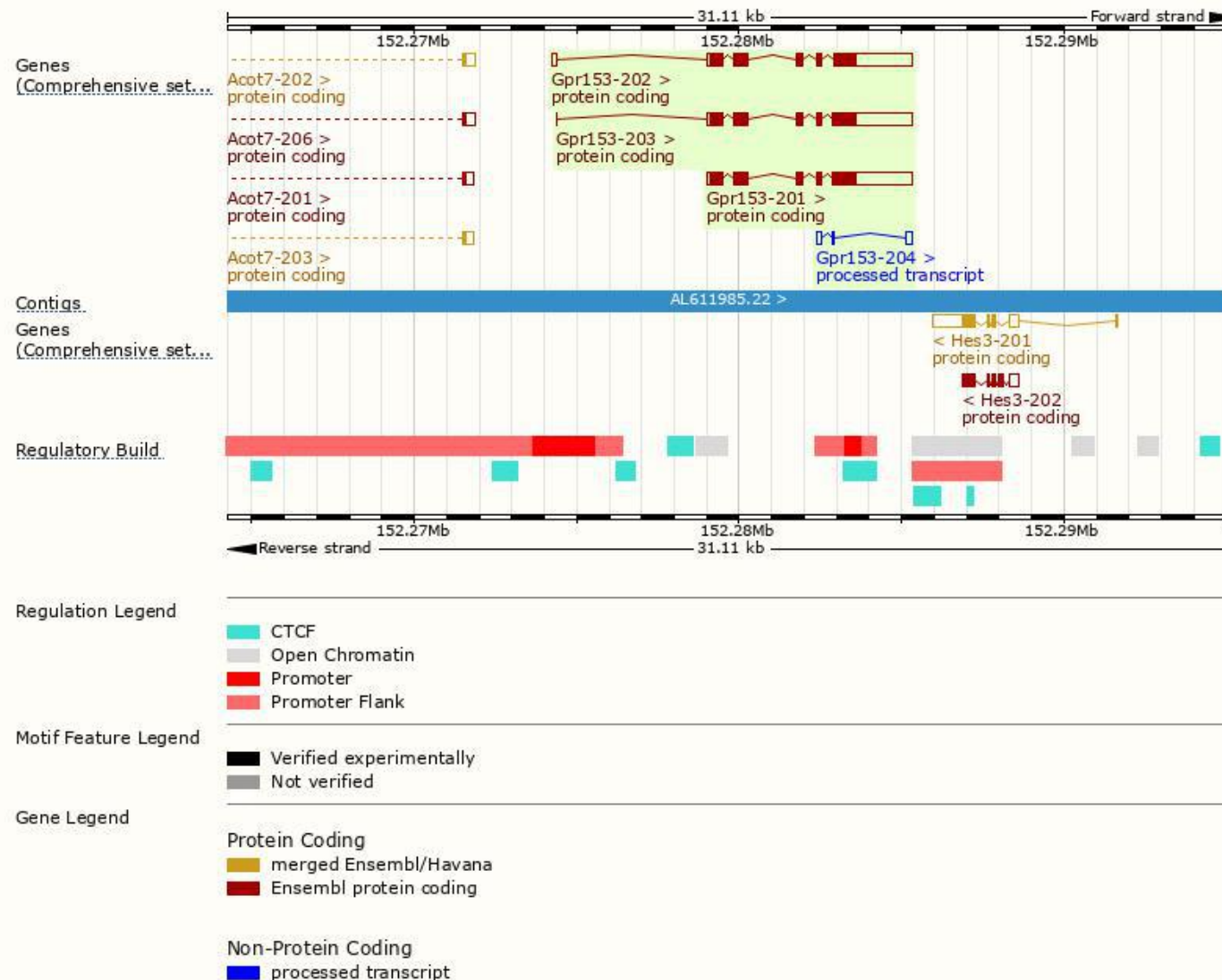
The gene has 4 transcripts,all transcripts are shown below:

Show/hide columns (1 hidden)							Filter	
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags	
Gpr153-204	ENSMUST00000144035.1	427	No protein	lncRNA	-	-	TSL:5	
Gpr153-203	ENSMUST00000105651.7	3777	631aa	Protein coding	CCDS18996	Q8K0Z9	TSL:5	GENCODE basic APPRIS P2
Gpr153-202	ENSMUST00000105650.7	3838	608aa	Protein coding	-	A2A8K5	TSL:5	GENCODE basic APPRIS ALT2
Gpr153-201	ENSMUST00000055754.7	3757	631aa	Protein coding	CCDS18996	Q8K0Z9	TSL:1	GENCODE basic APPRIS P2

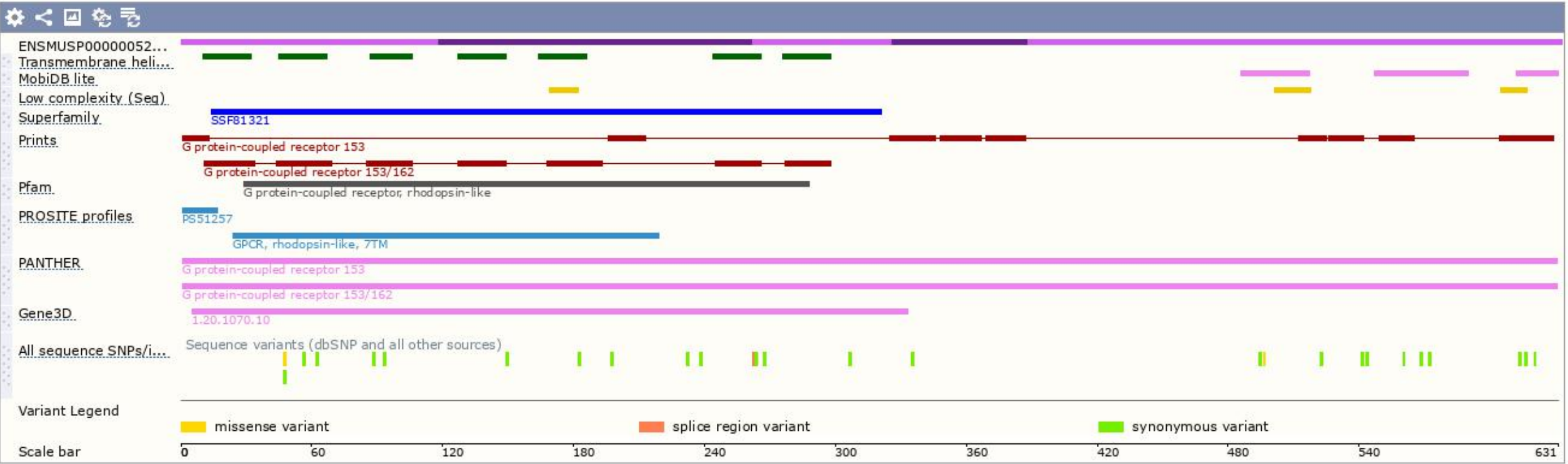
The strategy is based on the design of *Gpr153-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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