

Gulp1 Cas9-KO Strategy

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Design Date: 2020-6-19

Project Overview



Project Name

Gulp1

Project type

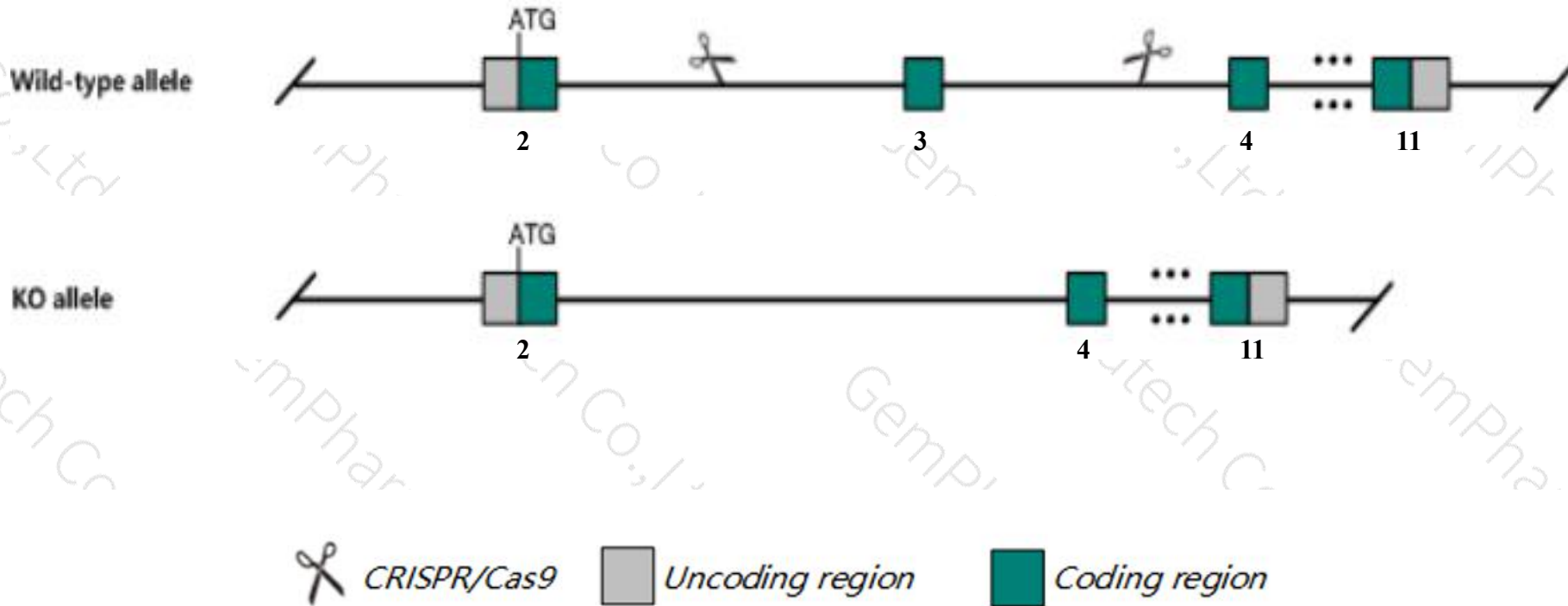
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gulp1* gene. The schematic diagram is as follows:



- The *Gulp1* gene has 6 transcripts. According to the structure of *Gulp1* gene, exon3 of *Gulp1-201*(ENSMUST00000074525.9) transcript is recommended as the knockout region. The region contains 62bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gulp1* 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 *Gulp1* gene is located on the Chr1. 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)

Gulp1 GULP, engulfment adaptor PTB domain containing 1 [Mus musculus (house mouse)]

Gene ID: 70676, updated on 13-Mar-2020

Summary



Official Symbol	Gulp1 provided by MGI
Official Full Name	GULP, engulfment adaptor PTB domain containing 1 provided by MGI
Primary source	MGI:MGI:1920407
See related	Ensembl:ENSMUSG00000056870
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	3110030A04Rik, 5730529O06Rik, CED-6, Ced6, GULP, Gulp-2
Expression	Broad expression in limb E14.5 (RPKM 12.2), bladder adult (RPKM 6.3) and 17 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

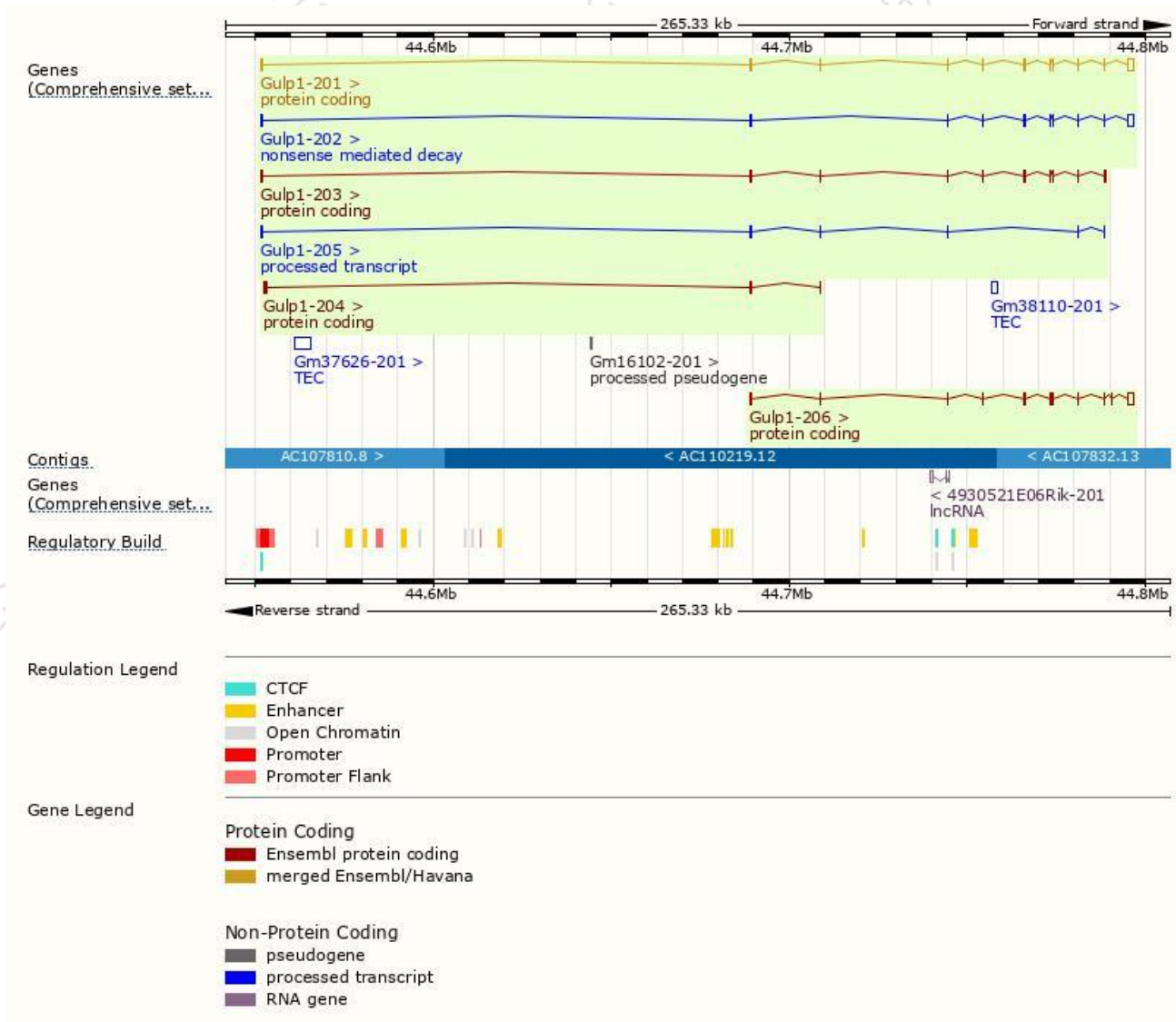
The gene has 6 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gulp1-201	ENSMUST00000074525.9	3138	304aa	Protein coding	CCDS48250	Q8K2A1	TSL:1 GENCODE basic APPRIS P1
Gulp1-206	ENSMUST00000162600.1	2798	299aa	Protein coding	-	E0CXC5	TSL:5 GENCODE basic
Gulp1-203	ENSMUST00000160854.7	1399	309aa	Protein coding	-	Q8K2A1	TSL:1 GENCODE basic
Gulp1-204	ENSMUST00000161066.7	341	14aa	Protein coding	-	E0CXG2	CDS 3' incomplete TSL:3
Gulp1-202	ENSMUST00000159555.7	2882	41aa	Nonsense mediated decay	-	E0CX89	TSL:1
Gulp1-205	ENSMUST00000161793.1	539	No protein	Processed transcript	-	-	TSL:3

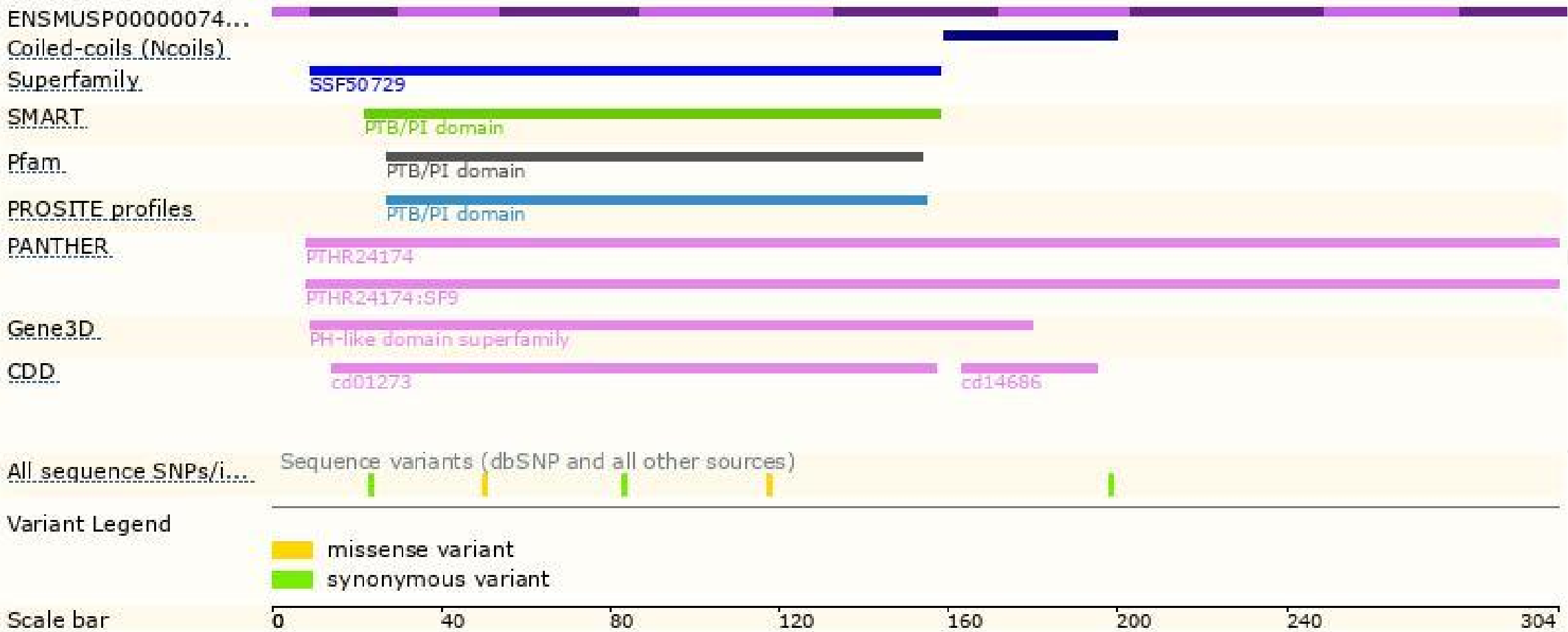
The strategy is based on the design of *Gulp1-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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