Gpatch11 Cas9-CKO Strategy

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Project Overview

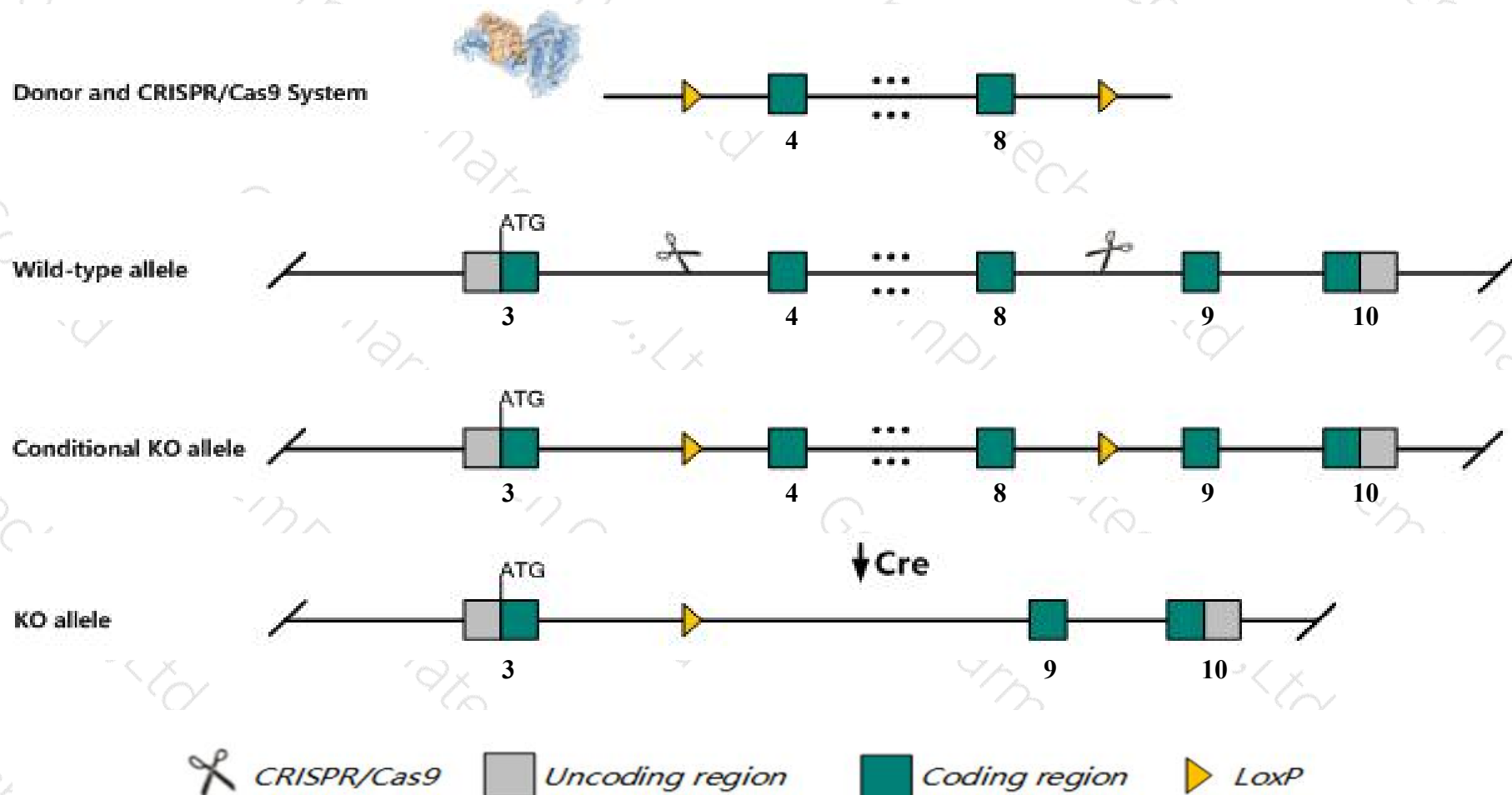|	
Project Name	***Gpatch11***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpatch11* gene. The schematic diagram is as follows:

Technical routes

➢ The *Gpatch11* gene has 5 transcripts. According to the structure of *Gpatch11* gene, exon4-exon8 of *Gpatch11-201* (ENSMUST00000170759.2) transcript is recommended as the knockout region.The region contains Ens 598bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Gpatch11* gene. The brief process is as follows:CRISPR/Cas9 system and Donor 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 flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

➢ Transcripts 203,204,205 may not be affected. The effect of transcript 202 is unknown.

➢ The *Gpatch11* gene is located on the Chr17. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information （NCBI）

Gpatch11 G patch domain containing 11 [*Mus musculus* (house mouse)]

Gene ID: 53951, updated on 12-Aug-2019

▲ Summary

Official Symbol	Gpatch11 provided by MGI
Official Full Name	G patch domain containing 11 provided by MGI
Primary source	MGI:MGI:1858435
See related	Ensembl:ENSMUSG00000050668
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	C80922; Ccdc75; L26697; 2310002B06Rik
Expression	Ubiquitous expression in cerebellum adult (RPKM 5.3), CNS E18 (RPKM 5.1) and 28 other tissues See more
Orthologs	human all

▲ Genomic context

Location: 17; 17 E3

Exon count: 11

See Gpatch11 in Genome Data Viewer

Transcript information（Ensembl）

The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gpatch11-201	ENSMUST00000170759.2	4134	264aa	Protein coding	CCDS28979	A0A0R4J215	TSL:1 GENCODE basic APPRIS P1
Gpatch11-202	ENSMUST00000233113.1	401	92aa	Protein coding	-	A0A3B2WAW3	CDS 3' incomplete
Gpatch11-203	ENSMUST00000233545.1	1889	No protein	Retained intron	-	-	
Gpatch11-205	ENSMUST00000233913.1	522	No protein	Retained intron	-	-	
Gpatch11-204	ENSMUST00000233775.1	394	No protein	lncRNA	-	-	

The strategy is based on the design of *Gpatch11-201* transcript,The transcription is shown below
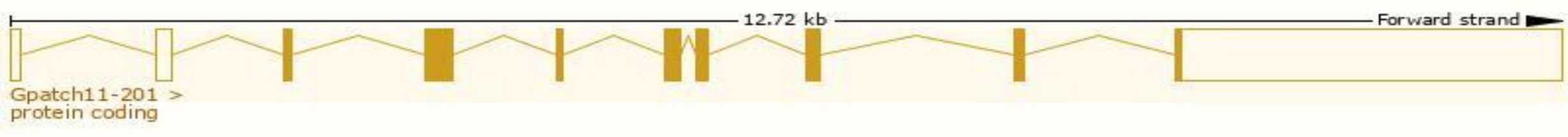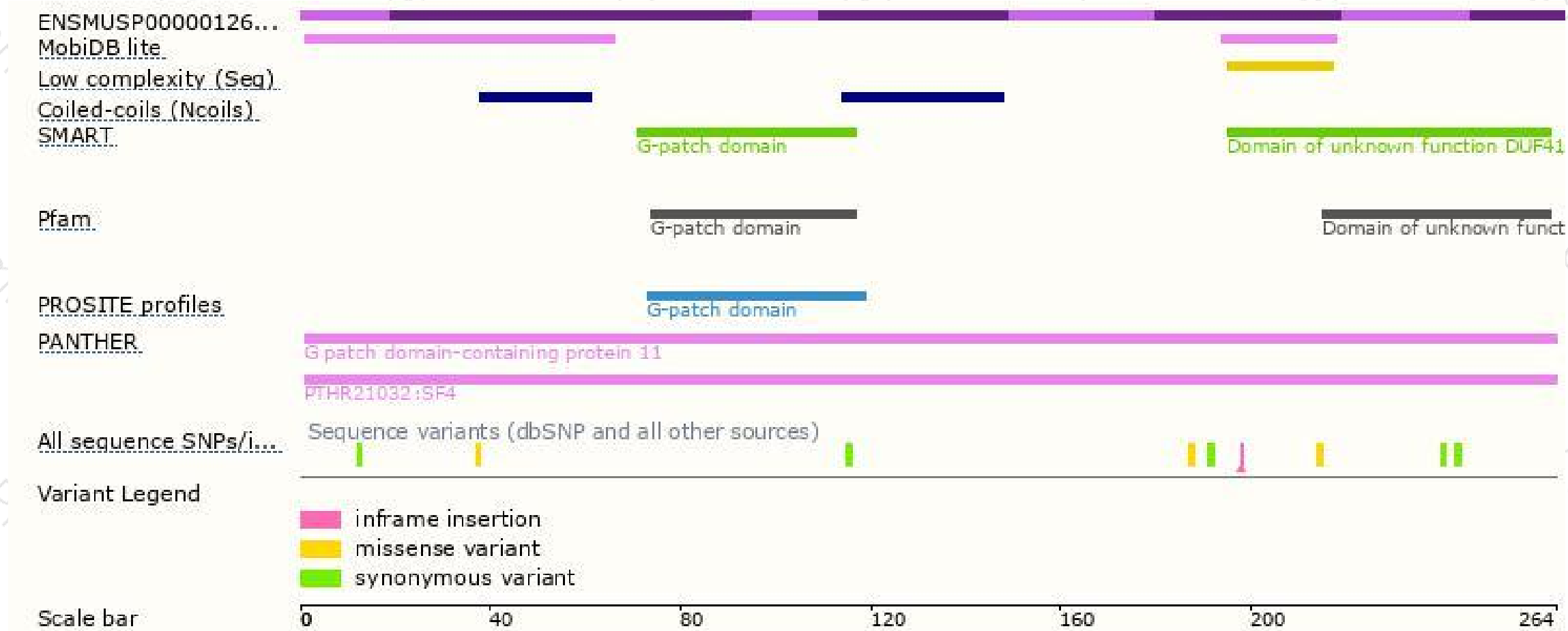
Genomic location distribution
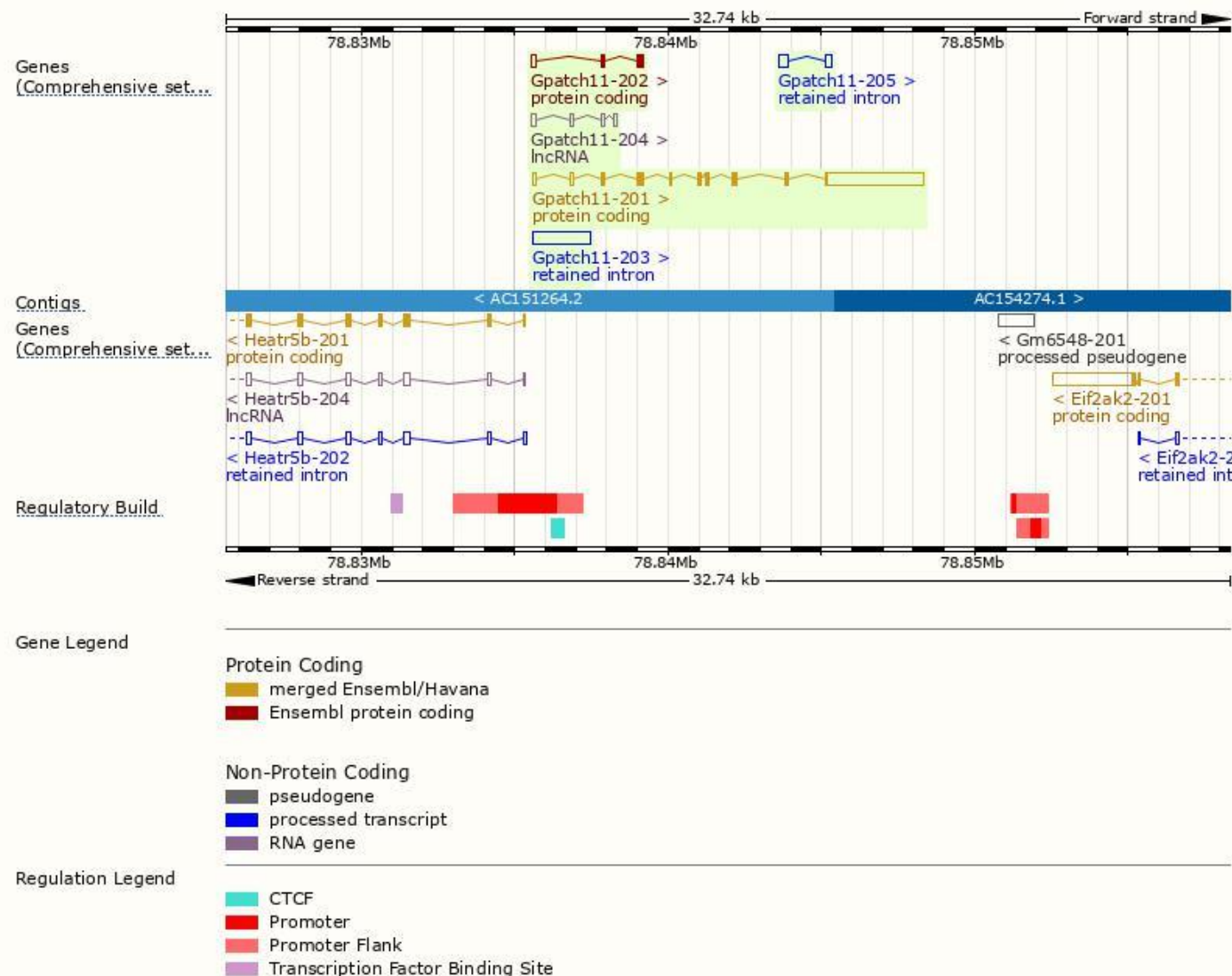
Protein domain

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