Extl1 Cas9-KO Strategy

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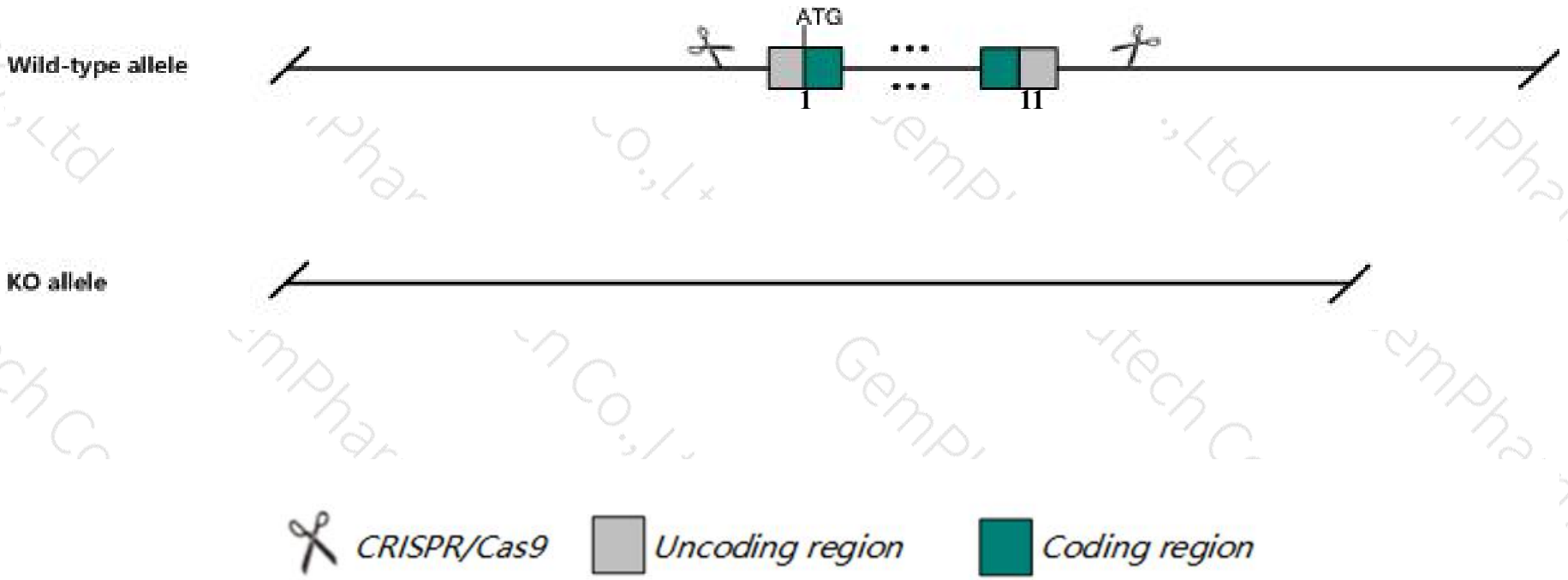
Project Overview

Project Name	***Extl1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Extl1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Extl1* gene has 3 transcripts. According to the structure of *Extl1* gene, exon1-exon11 of *Extl1-201* (ENSMUST00000030643.2) 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 *Extl1* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Extl1* 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）

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Extl1 exostosin-like glycosyltransferase 1 [*Mus musculus* (house mouse)]

Gene ID: 56219, updated on 10-Oct-2019

Summary

Official Symbol	Extl1 provided by MGI
Official Full Name	exostosin-like glycosyltransferase 1 provided by MGI
Primary source	MGI:MGI:1888742
See related	Ensembl:ENSMUSG00000028838
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	D430033M16Rik
Expression	Broad expression in cortex adult (RPKM 13.0), frontal lobe adult (RPKM 8.2) and 18 other tissues See more
Orthologs	human all

Genomic context

Location: 4 D3; 4 66.63 cM

See Extl1 in Genome Data Viewer

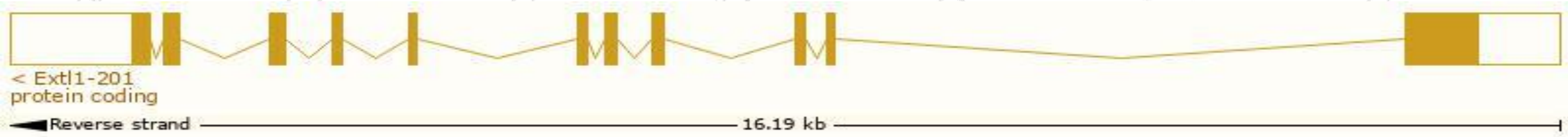
Exon count: 11

Transcript information（Ensembl）

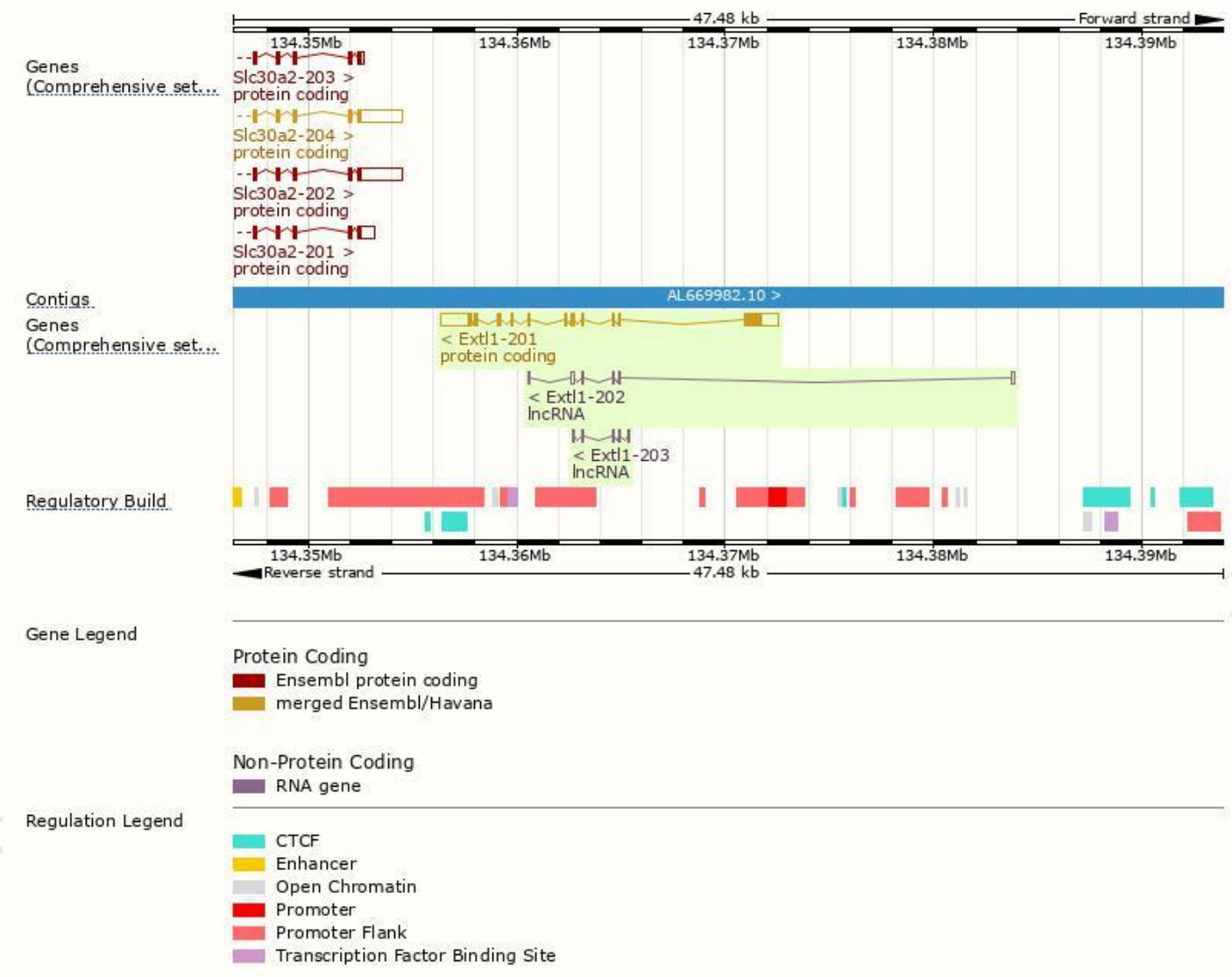
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Extl1-201	ENSMUST00000030643.2	4126	669aa	Protein coding	CCDS18770	Q9JKV7	TSL:1 GENCODE basic APPRIS P1
Extl1-202	ENSMUST00000132387.7	667	No protein	lncRNA	-	-	TSL:5
Extl1-203	ENSMUST00000142730.1	396	No protein	lncRNA	-	-	TSL:3

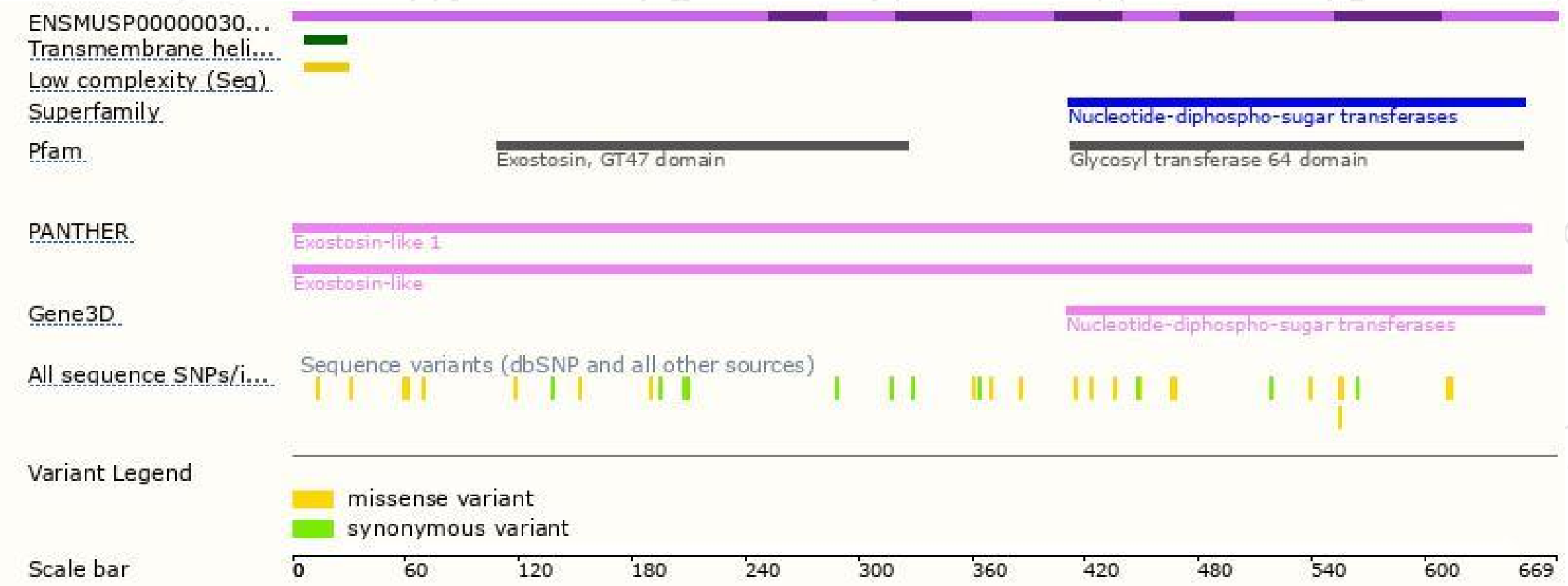
The strategy is based on the design of *Extl1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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