Gli1 Cas9-KO Strategy

Designer: **Daohua Xu**

Reviewer：   **Huimin Su**

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Project Overview

Project Name	*Gli1*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gli1* gene. The schematic diagram is as follows:

Technical routes

➢ The *Gli1* gene has 5 transcripts. According to the structure of *Gli1* gene, exon3-exon11 of *Gli1-201* (ENSMUST00000026474.4) transcript is recommended as the knockout region.The region contains start codon ATG. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Gli1* gene. The brief process is as follows: CRISPR/Cas9 system w

Notice

➢ According to the existing MGI data,Homozygotes for a targeted null mutation are apparently normal, but homozygotes that are also heterozygous for a Gli2 knockout die soon after birth with multiple defects, while Gli2 knockout heterozygotes are normally viable.

➢ The *Gli1* gene is located on the Chr10. 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）

Gli1 GLI-Kruppel family member GLI1 [Mus musculus (house mouse)]

Gene ID: 14632, updated on 9-Apr-2019

▲ Summary

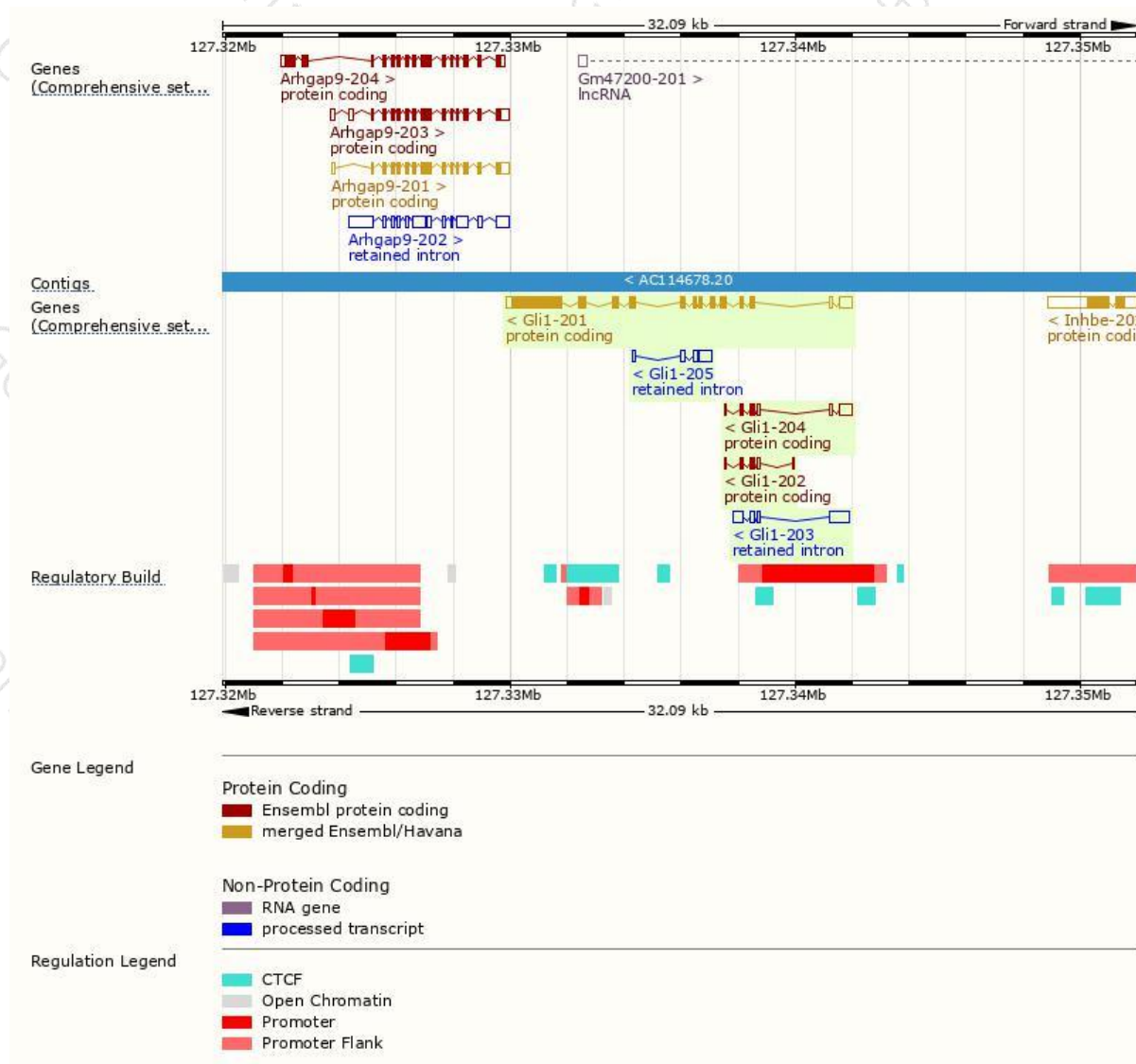|	
Official Symbol	Gli1 provided by MGI
Official Full Name	GLI-Kruppel family member GLI1 provided by MGI
Primary source	MGI:MGI:95727
See related	Ensembl:ENSMUSG00000025407
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AV235269, Zfp-5, Zfp5
Expression	Biased expression in limb E14.5 (RPKM 44.9), subcutaneous fat pad adult (RPKM 27.9) and 14 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gli1-201	ENSMUST00000026474.4	4057	1111aa	Protein coding	CCDS24238	P47806	TSL:1 GENCODE basic APPRIS P1
Gli1-204	ENSMUST00000219671.1	954	93aa	Protein coding	-	D4Q8I4	CDS 3' incomplete TSL:1
Gli1-202	ENSMUST00000218236.1	467	93aa	Protein coding	-	D4Q8I4	CDS 3' incomplete TSL:1
Gli1-203	ENSMUST00000218451.1	1252	No protein	Retained intron	-	-	TSL:1
Gli1-205	ENSMUST00000219808.1	795	No protein	Retained intron	-	-	TSL:3

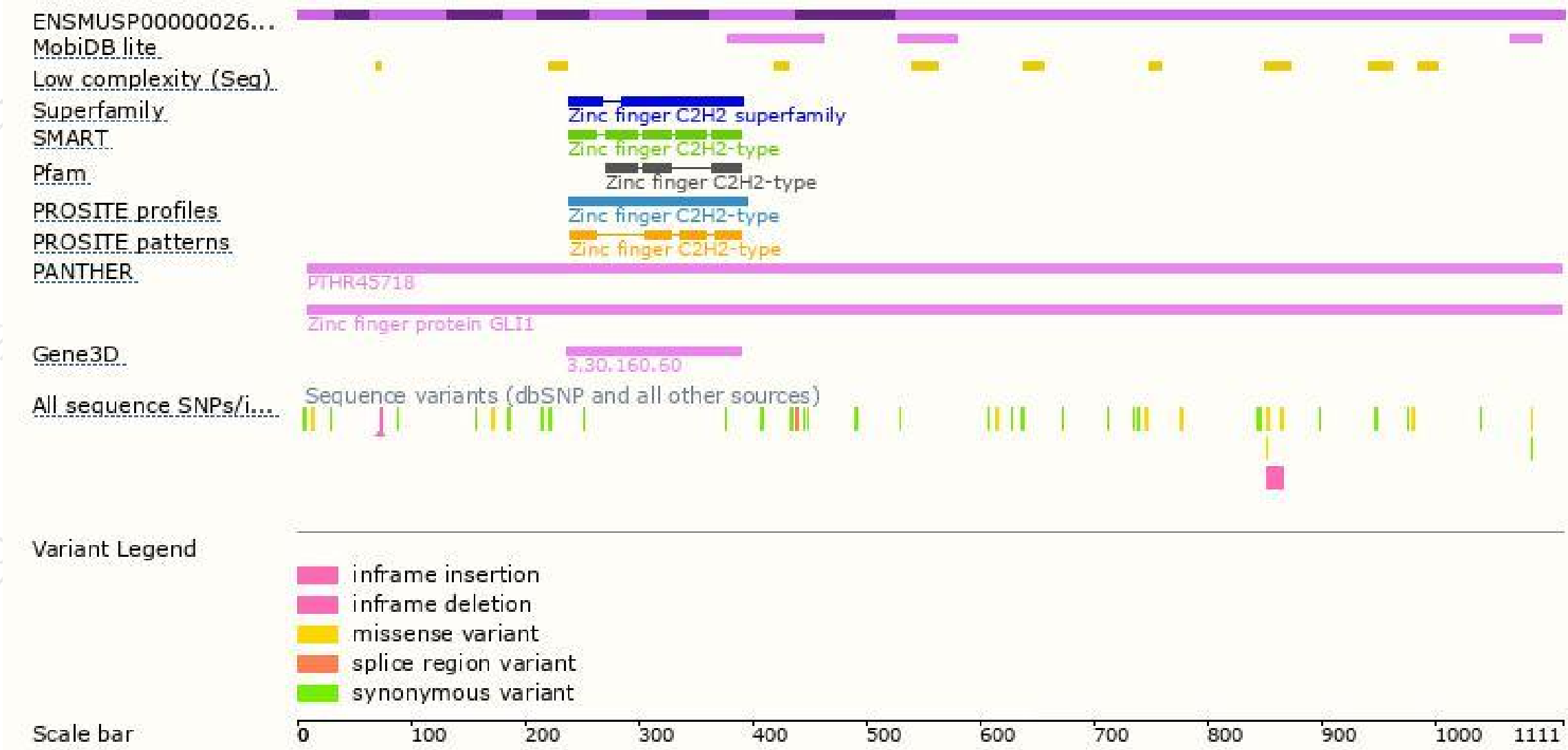The strategy is based on the design of *Gli1-201* transcript,The transcription is shown below

< Gli1-201
protein coding

◄─ Reverse strand

12.09 kb
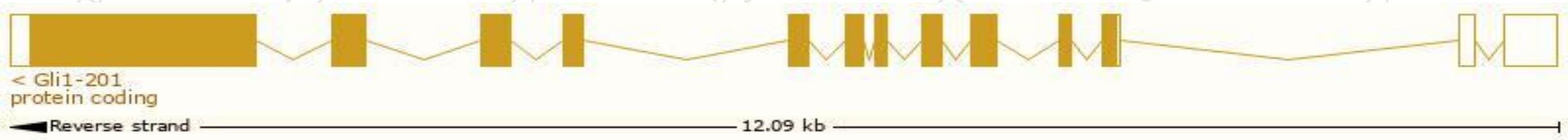
Genomic location distribution

Protein domain

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If you have any questions, you are welcome to inquire.
Tel: 400-9660890

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