Patl2 Cas9-KO Strategy

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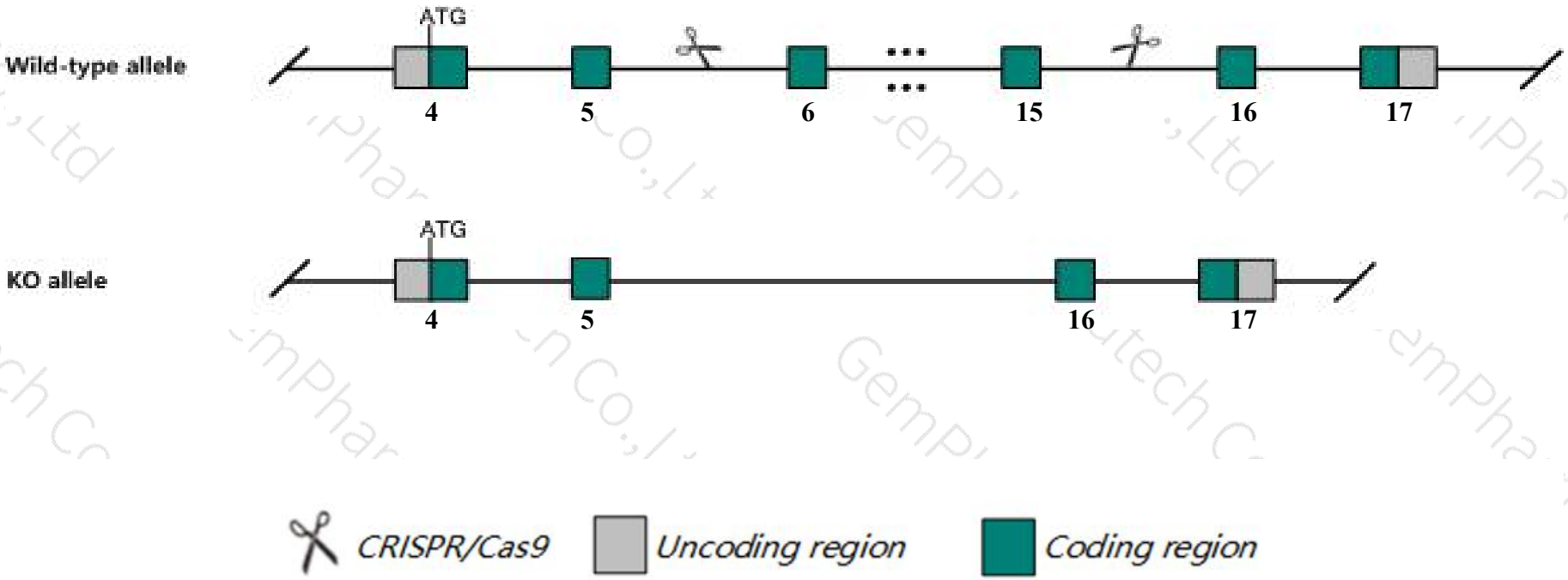
Design Date: 2019-9-20

Project Overview

Project Name	***Patl2***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Patl2* gene. The schematic diagram is as follows:



Technical routes

➢ The *Patl2* gene has 1 transcript. According to the structure of *Patl2* gene, exon6-exon15 of *Patl2-201* (ENSMUST00000028665.4) transcript is recommended as the knockout region.The region contains most 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 *Patl2* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Patl2* gene is located on the Chr2. 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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Patl2 protein associated with topoisomerase II homolog 2 (yeast) [*Mus musculus* (house mouse)]

Gene ID: 67578, updated on 12-Aug-2019

Summary

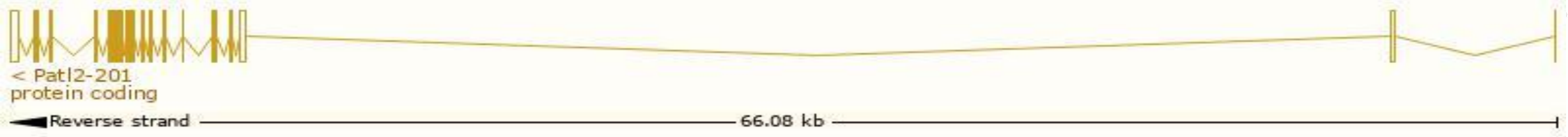
Official Symbol	Patl2 provided by MGI
Official Full Name	protein associated with topoisomerase II homolog 2 (yeast) provided by MGI
Primary source	MGI:MGI:1914828
See related	Ensembl:ENSMUSG00000027233
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Pat1a; 4930424G05Rik
Expression	Biased expression in placenta adult (RPKM 1.1), ovary adult (RPKM 0.7) and 4 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags		
Patl2-201	ENSMUST00000028665.4	2434	529aa	Protein coding	CCDS16653	A2ARM1	TSL:1	GENCODE basic	APPRIS P1

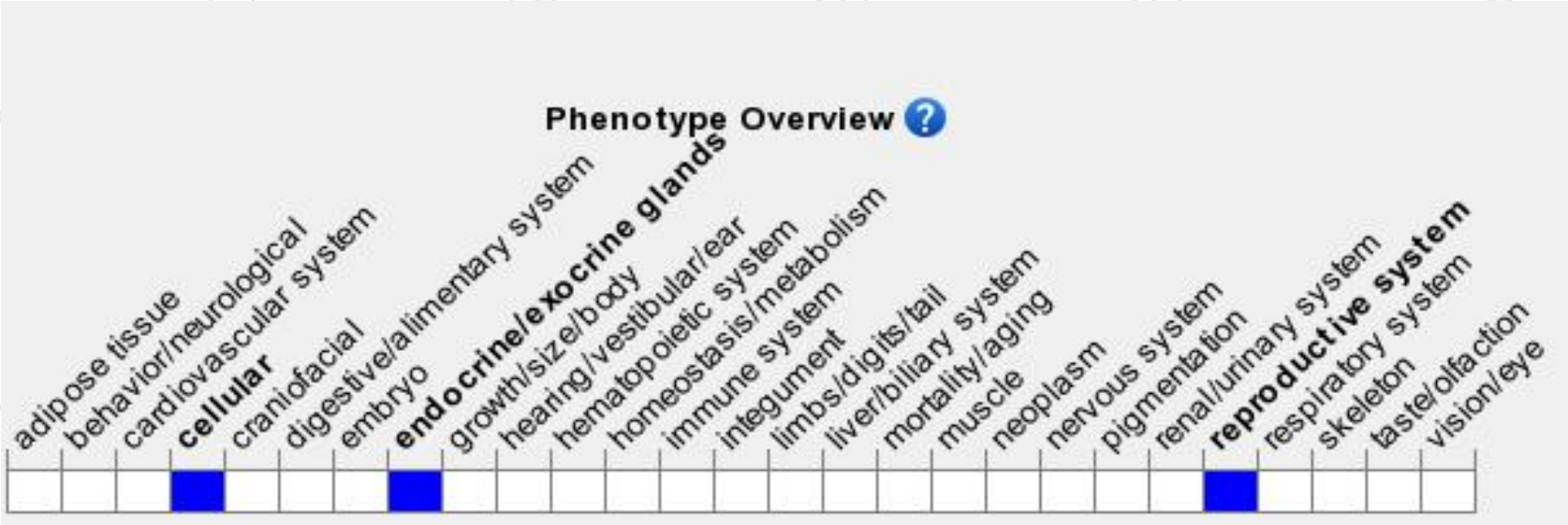
The strategy is based on the design of *Patl2-201* transcript,The transcription is shown below



Genomic location distribution

Protein domain

Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(http://www.informatics.jax.org/).

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

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