Wdr47 Cas9-KO Strategy

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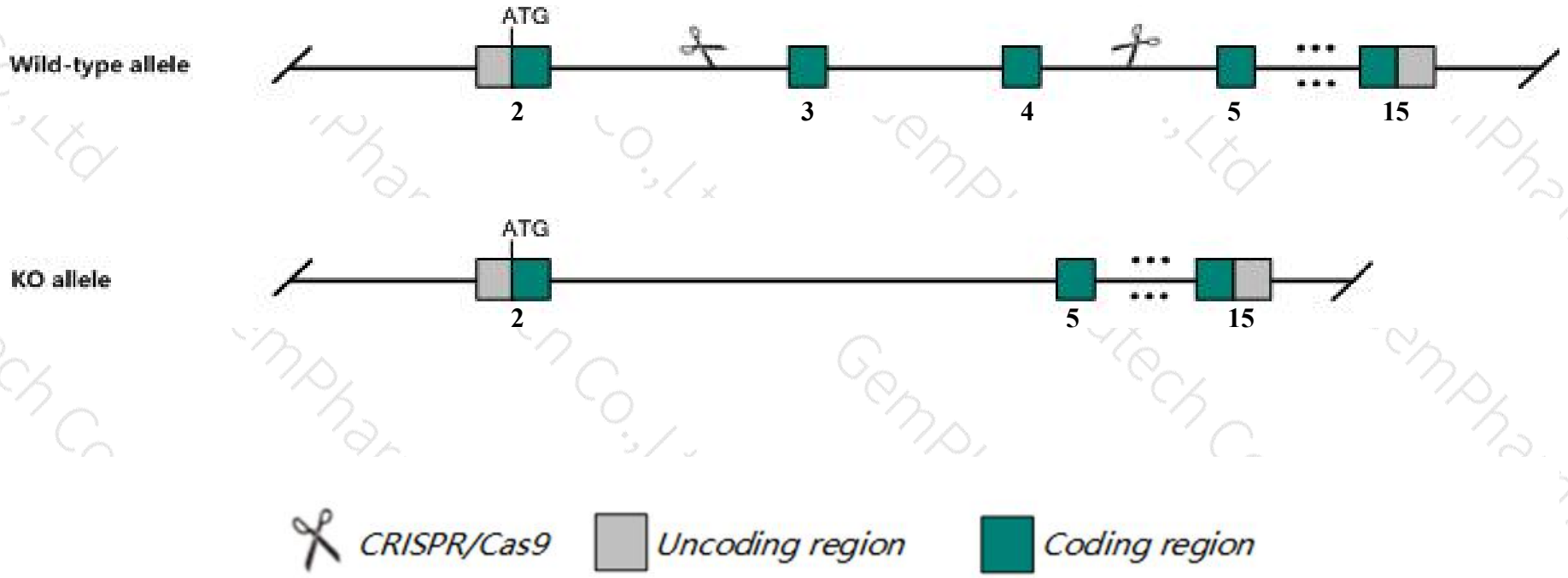
Project Overview

Project Name	***Wdr47***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wdr47* gene. The schematic diagram is as follows:



Technical routes

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- The *Wdr47* gene has 7 transcripts. According to the structure of *Wdr47* gene, exon3-exon4 of *Wdr47-201* (ENSMUST00000051145.14) transcript is recommended as the knockout region.The region contains 169bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Wdr47* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- The *Wdr47* gene is located on the Chr3. 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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Wdr47 WD repeat domain 47 [Mus musculus (house mouse)]

Gene ID: 99512, updated on 31-Jan-2019

Summary

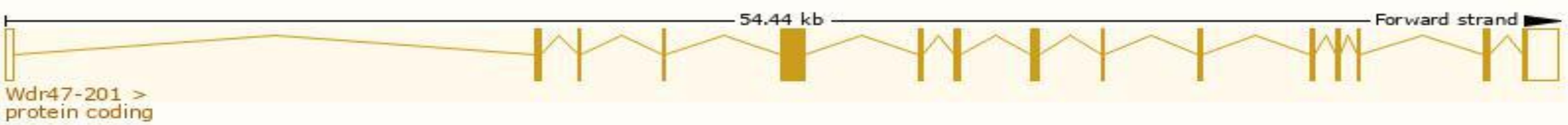
Official Symbol	Wdr47 provided by MGI
Official Full Name	WD repeat domain 47 provided byMGI
Primary source	MGI:MGI:2139593
See related	Ensembl:ENSMUSG00000040389
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810073M12Rik, AA552998, mKIAA0893
Expression	Broad expression in CNS E18 (RPKM 32.5), CNS E14 (RPKM 23.3) and 16 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

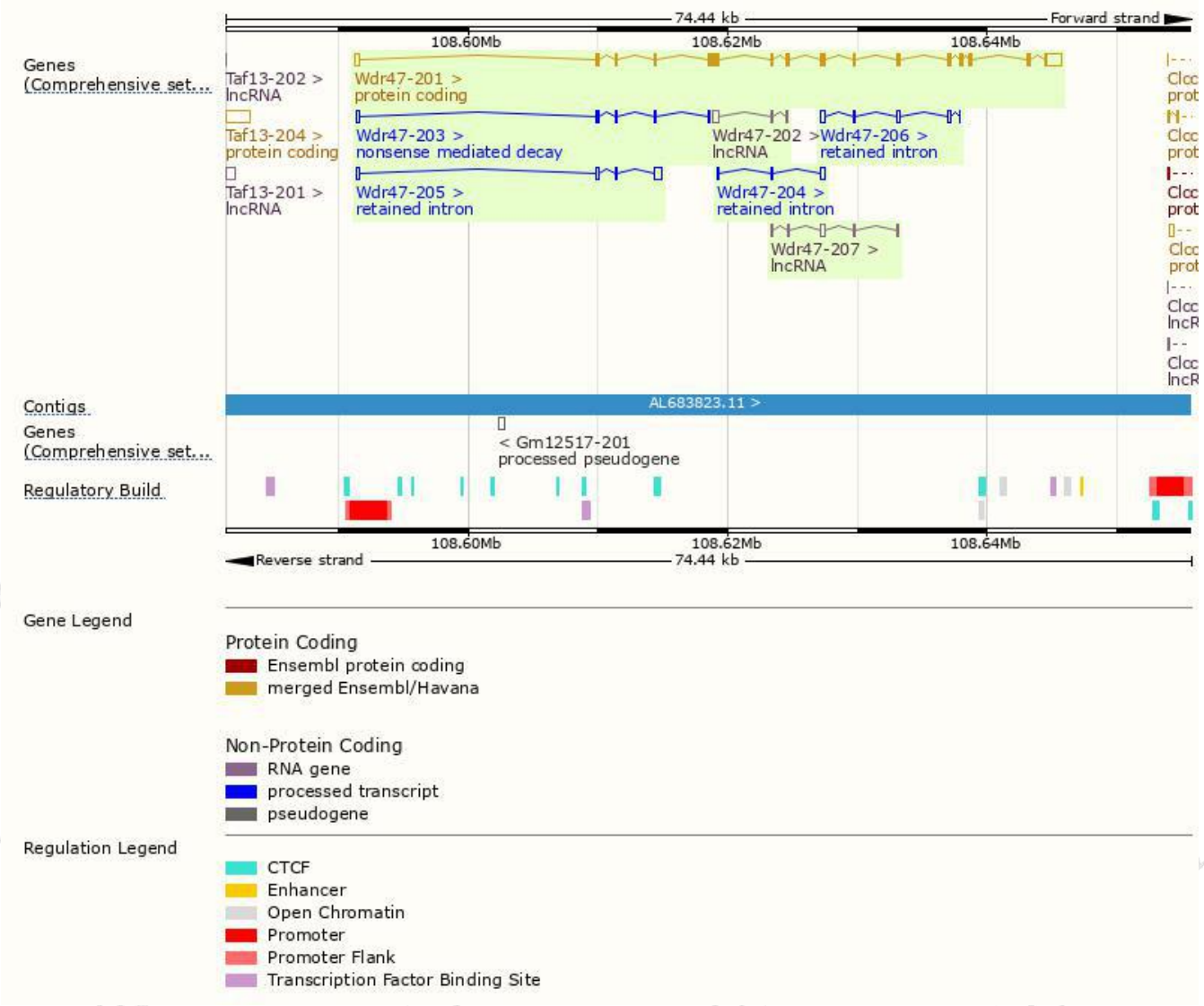
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wdr47-201	ENSMUST00000051145.14	4222	920aa	Protein coding	CCDS17765	Q8CGF6	TSL:1 GENCODE basic APPRIS P1
Wdr47-203	ENSMUST00000124731.2	745	53aa	Nonsense mediated decay	-	A0A0G2JFW8	TSL:3
Wdr47-205	ENSMUST00000139626.2	1088	No protein	Retained intron	-	-	TSL:1
Wdr47-206	ENSMUST00000144325.1	701	No protein	Retained intron	-	-	TSL:3
Wdr47-204	ENSMUST00000133453.1	529	No protein	Retained intron	-	-	TSL:3
Wdr47-202	ENSMUST00000123568.1	663	No protein	lncRNA	-	-	TSL:3
Wdr47-207	ENSMUST00000197398.4	654	No protein	lncRNA	-	-	TSL:3

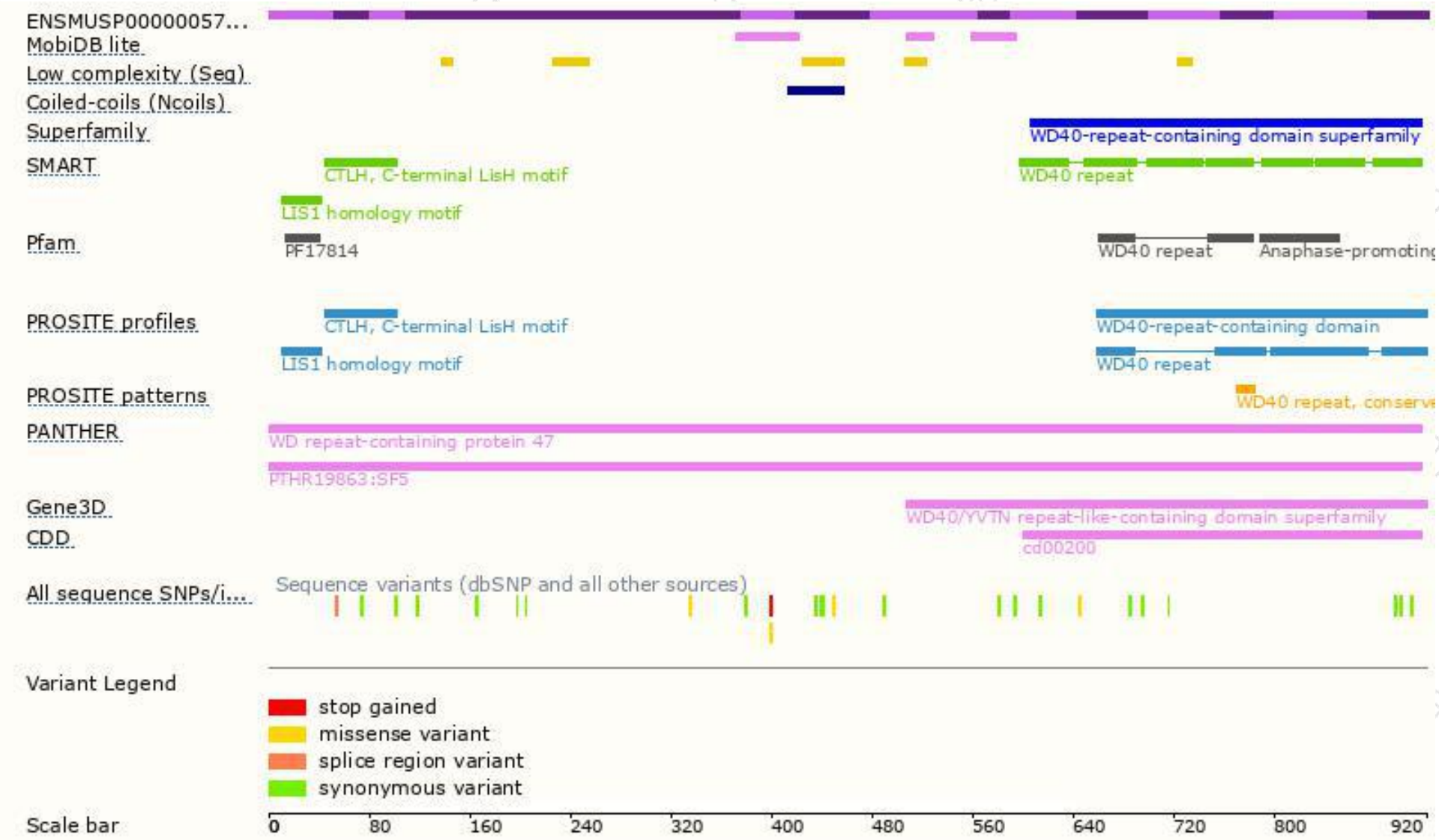
The strategy is based on the design of *Wdr47-201* transcript,The transcription is shown below



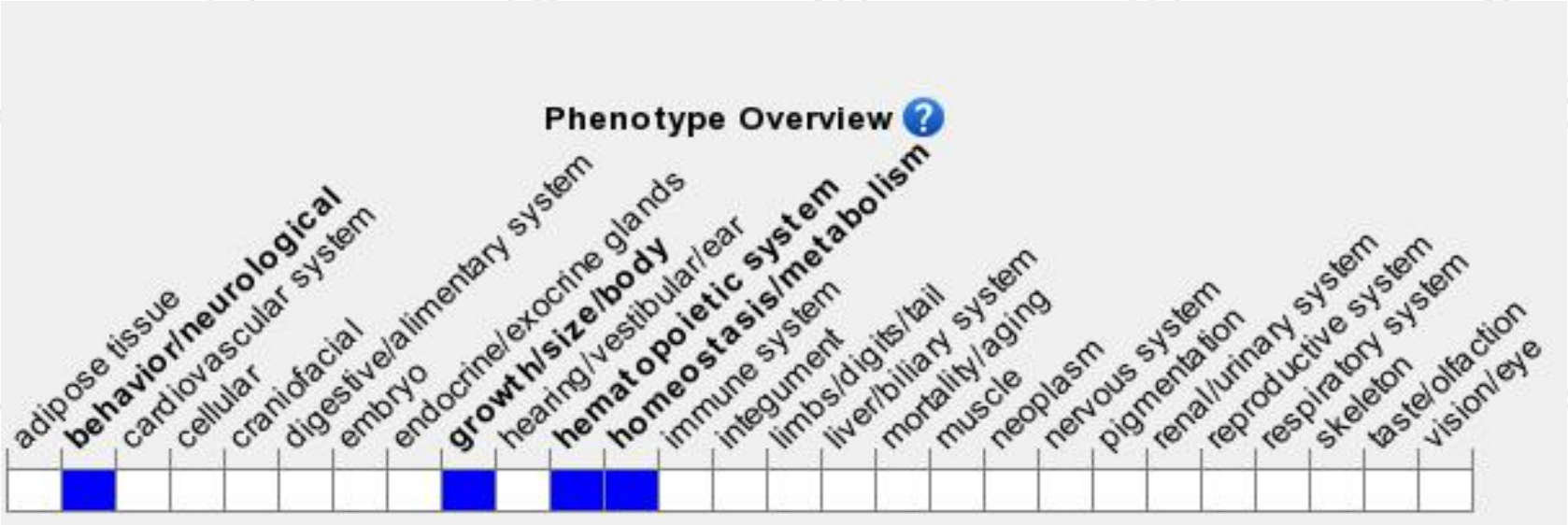
Genomic location distribution



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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