

Wwp1 Cas9-CKO Strategy

Designer

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Reviewer

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Project Overview

Project Name

Wwp1

Project type

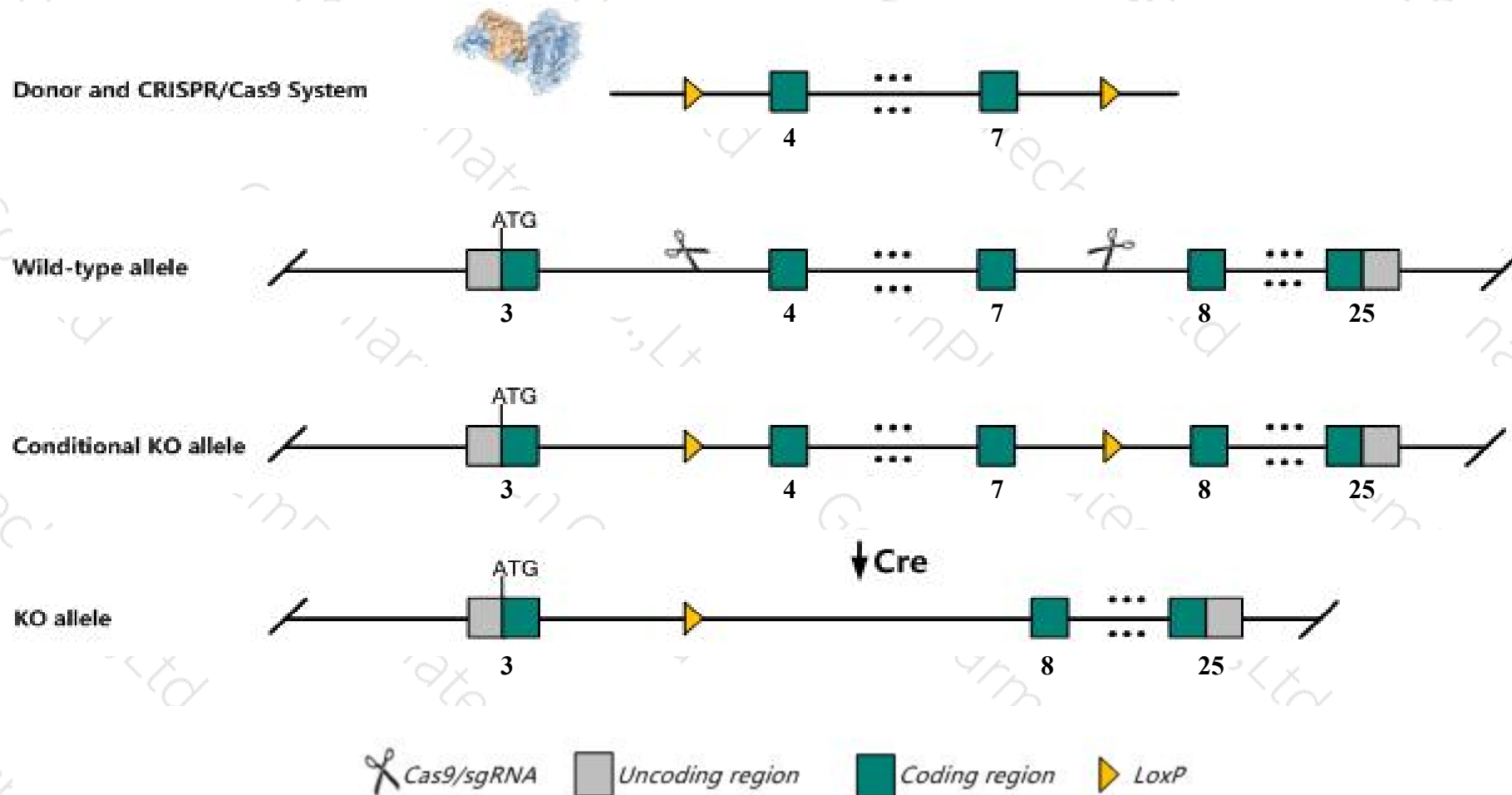
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wwp1* gene. The schematic diagram is as follows:



- The *Wwp1* gene has 2 transcripts. According to the structure of *Wwp1* gene, exon4-exon7 of *Wwp1*-202 (ENSMUST00000108246.8) transcript is recommended as the knockout region. The region contains 469bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wwp1* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit increased osteoblast differentiation of bone marrow-derived stromal cells.
- The *Wwp1* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Wwp1 WW domain containing E3 ubiquitin protein ligase 1 [Mus musculus (house mouse)]

Gene ID: 107568, updated on 19-Mar-2019

Summary



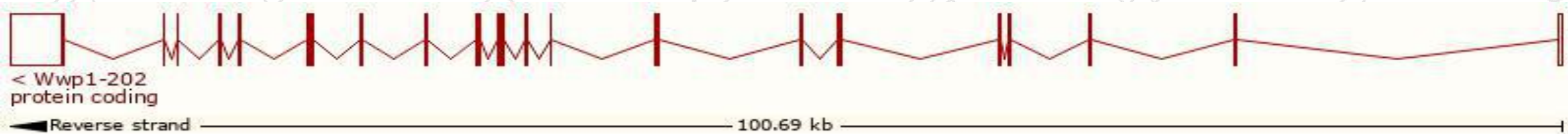
Official Symbol	Wwp1 provided by MGI
Official Full Name	WW domain containing E3 ubiquitin protein ligase 1 provided by MGI
Primary source	MGI:MGI:1861728
See related	Ensembl:ENSMUSG00000041058
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	8030445B08Rik, AIP5, SDRP1, Tiul1
Expression	Ubiquitous expression in bladder adult (RPKM 6.5), cerebellum adult (RPKM 5.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

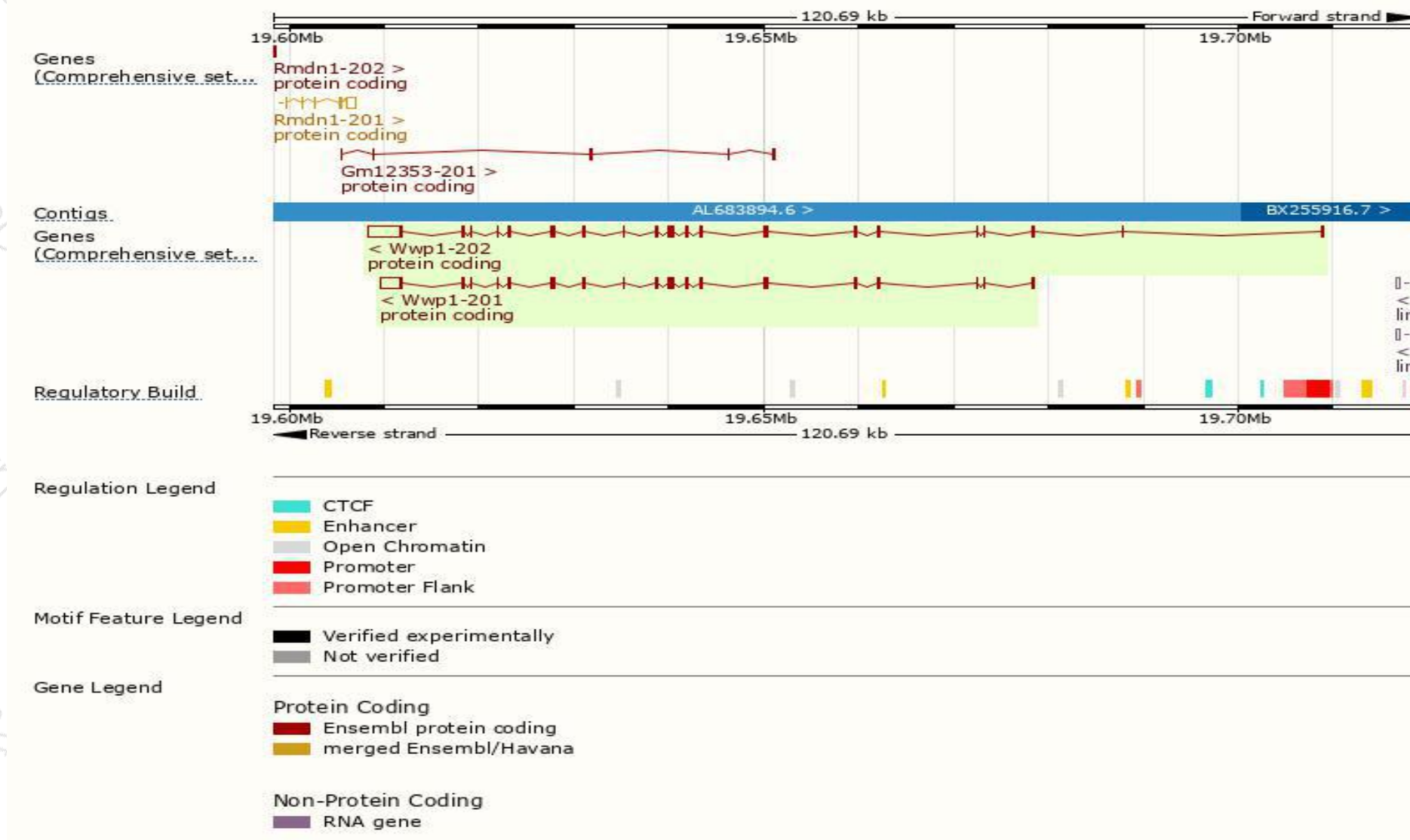
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wwp1-202	ENSMUST00000108246.8	6440	918aa	Protein coding	CCDS38697	Q8BZZ3	TSL:1 GENCODE basic APPRIS P1
Wwp1-201	ENSMUST00000035982.7	4832	918aa	Protein coding	CCDS38697	Q8BZZ3	TSL:5 GENCODE basic APPRIS P1

The strategy is based on the design of *Wwp1-202* transcript,The transcription is shown below



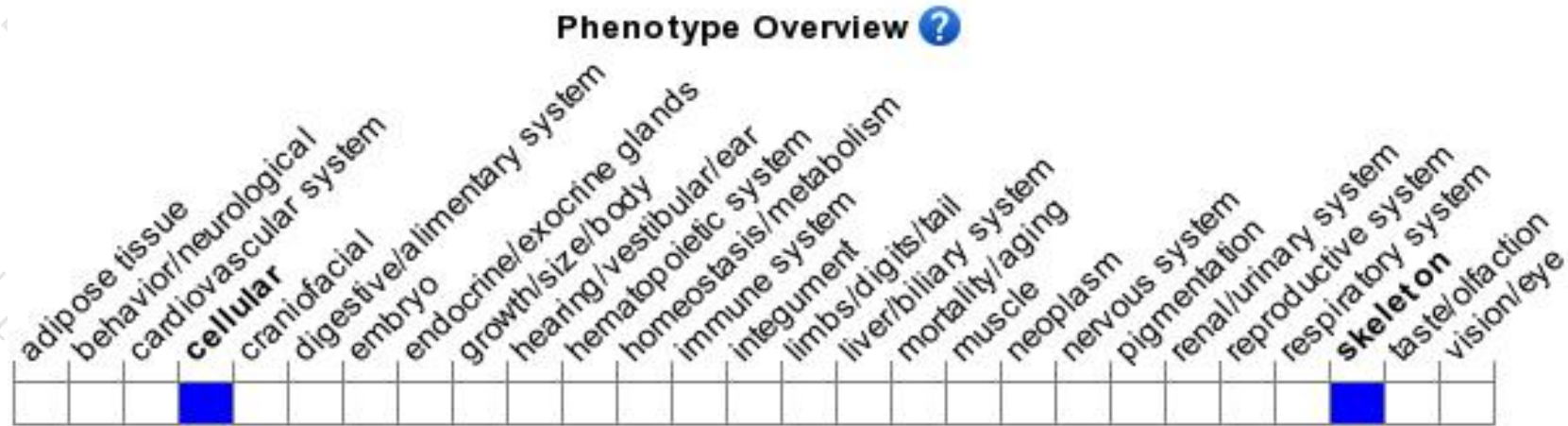
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a knock-out allele exhibit increased osteoblast differentiation of bone marrow-derived stromal cells.

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

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