Wbp11 Cas9-KO Strategy

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Project Overview

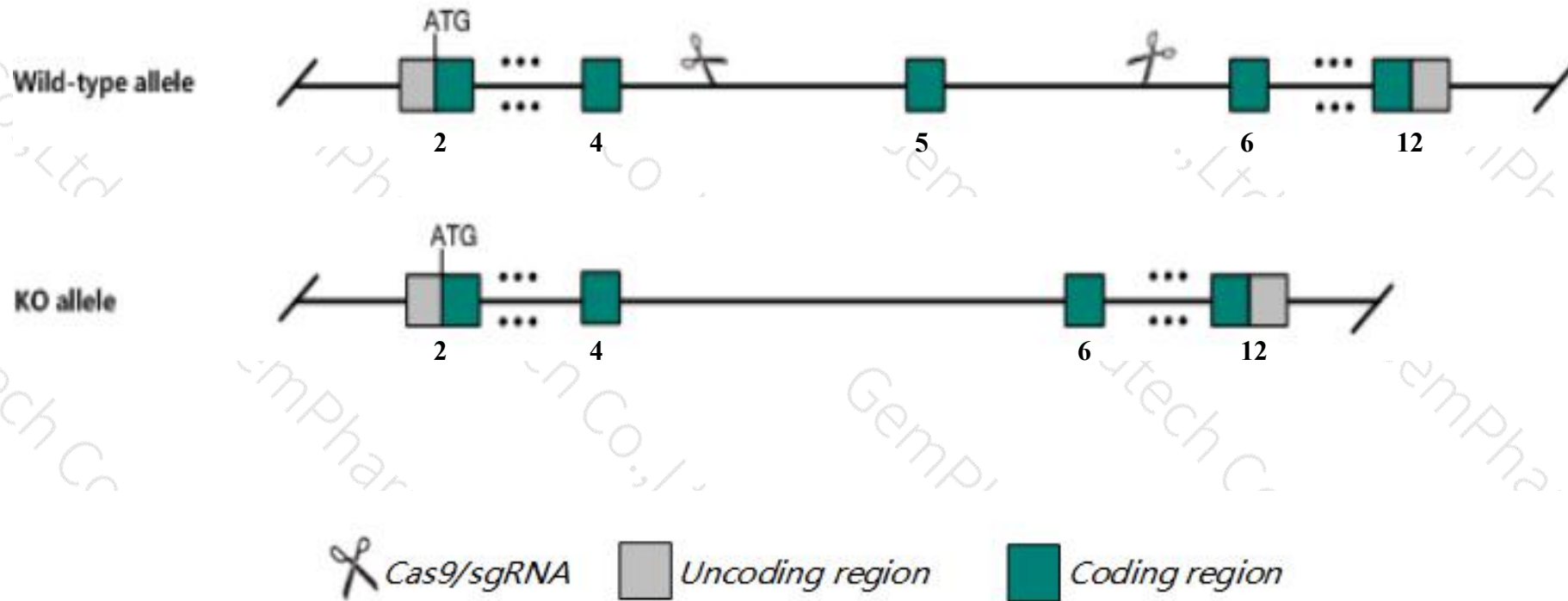|	
Project Name	*Wbp11*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wbp11* gene. The schematic diagram is as follows:

➢ The *Wbp11* gene has 7 transcripts. According to the structure of *Wbp11* gene, exon5 of *Wbp11-201*(ENSMUST00000116514.3) transcript is recommended as the knockout region.The region contains 197bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Wbp11* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA 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.

Notice

➢ The *Wbp11* gene is located on the Chr6. 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.

➢ The knockout region is about 4.3kb away from the 5-terminal of BC049715, which may affect the regulation of its 5-terminal.

➢ The effect of this strategy on *Wbp11*204 or 206 transcript is unknown.

➢ 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）

Wbp11 WW domain binding protein 11 [Mus musculus (house mouse)]
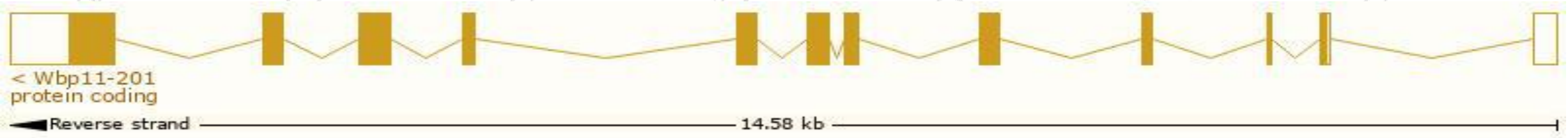
Gene ID: 60321, updated on 13-Mar-2020

▲ Summary

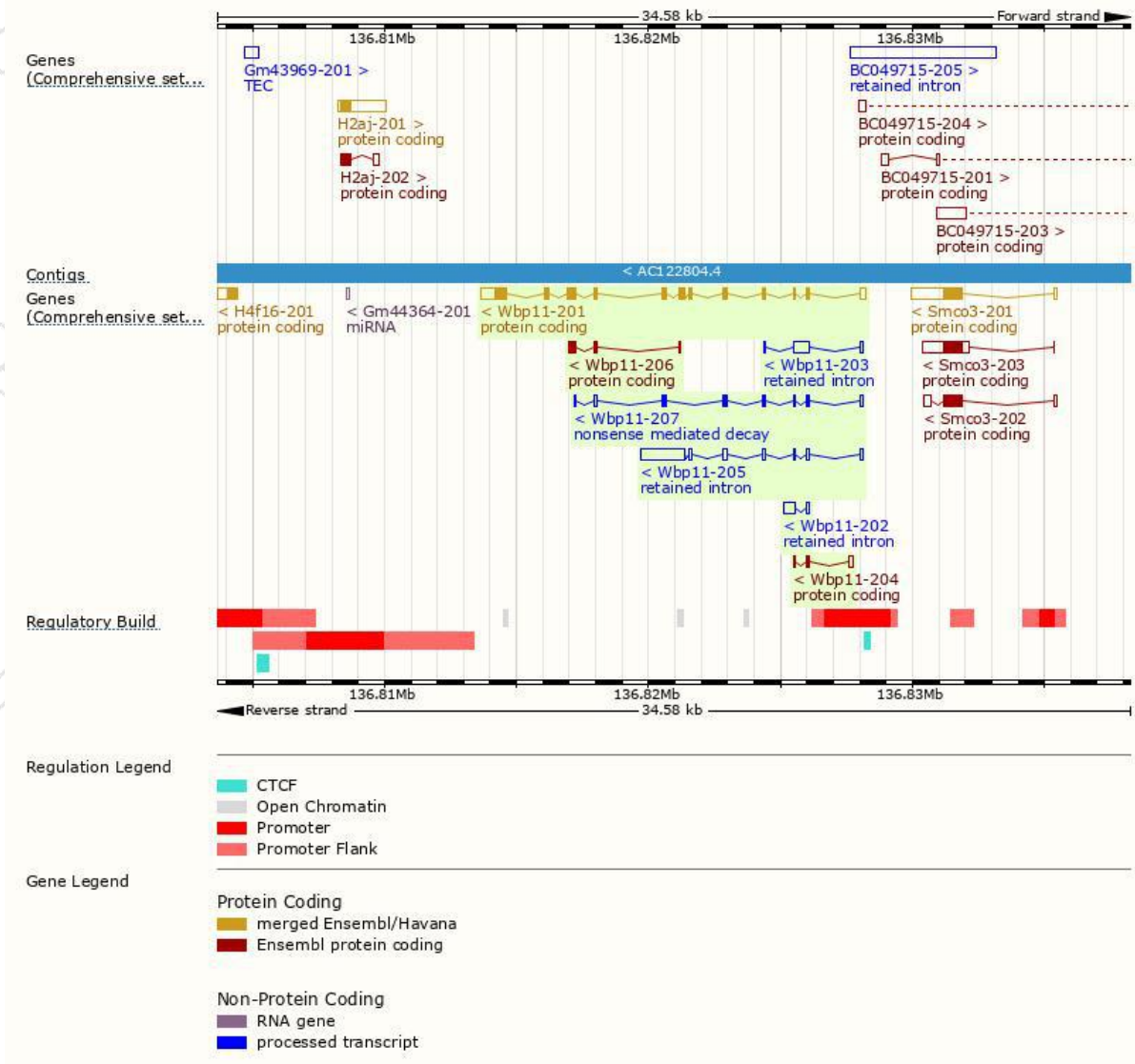|	
Official Symbol	Wbp11 provided by MGI
Official Full Name	WW domain binding protein 11 provided by MGI
Primary source	MGI:MGI:1891823
See related	Ensembl:ENSMUSG00000030216
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2510026P17Rik, D6Wsu113e, Npwbp, SIPP1
Expression	Ubiquitous expression in testis adult (RPKM 80.0), CNS E11.5 (RPKM 24.0) and 28 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
Wbp11-201	ENSMUST00000116514.3	2739	641aa	Protein coding	CCDS20655	Q923D5	TSL:1 GENCODE basic APPRIS P1
Wbp11-206	ENSMUST0000204129.1	427	143aa	Protein coding	-	A0A0N4SV69	CDS 5' and 3' incomplete TSL:1
Wbp11-204	ENSMUST00000146348.3	312	32aa	Protein coding	-	A0A0N4SVL7	CDS 3' incomplete TSL:5
Wbp11-207	ENSMUST0000204272.2	905	194aa	Nonsense mediated decay	-	A0A0N4SWF7	TSL:5
Wbp11-205	ENSMUST00000151333.1	2339	No protein	Retained intron	-	-	TSL:1
Wbp11-203	ENSMUST00000141598.2	779	No protein	Retained intron	-	-	TSL:5
Wbp11-202	ENSMUST00000129078.1	536	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Wbp11-201* transcript,the transcription is shown below:

< Wbp11-201
protein coding

◄ Reverse strand

14.58 kb

Genomic location distribution

Protein domain

ENSMUSP00000112...	
MobiDB lite	
Low complexity (Seg)	
Coiled-coils (Ncoils)	
Pfam	WW domain binding protein 11
PANTHER	PTHR13361:SF2
	WW domain binding protein 11
All sequence SNPs/i...	Sequence variants (dbSNP and all other sources)

Variant Legend

- 🟥 stop gained
- 🟨 missense variant
- 🟩 synonymous variant

Scale bar   0   60   120   180   240   300   360   420   480   540   641
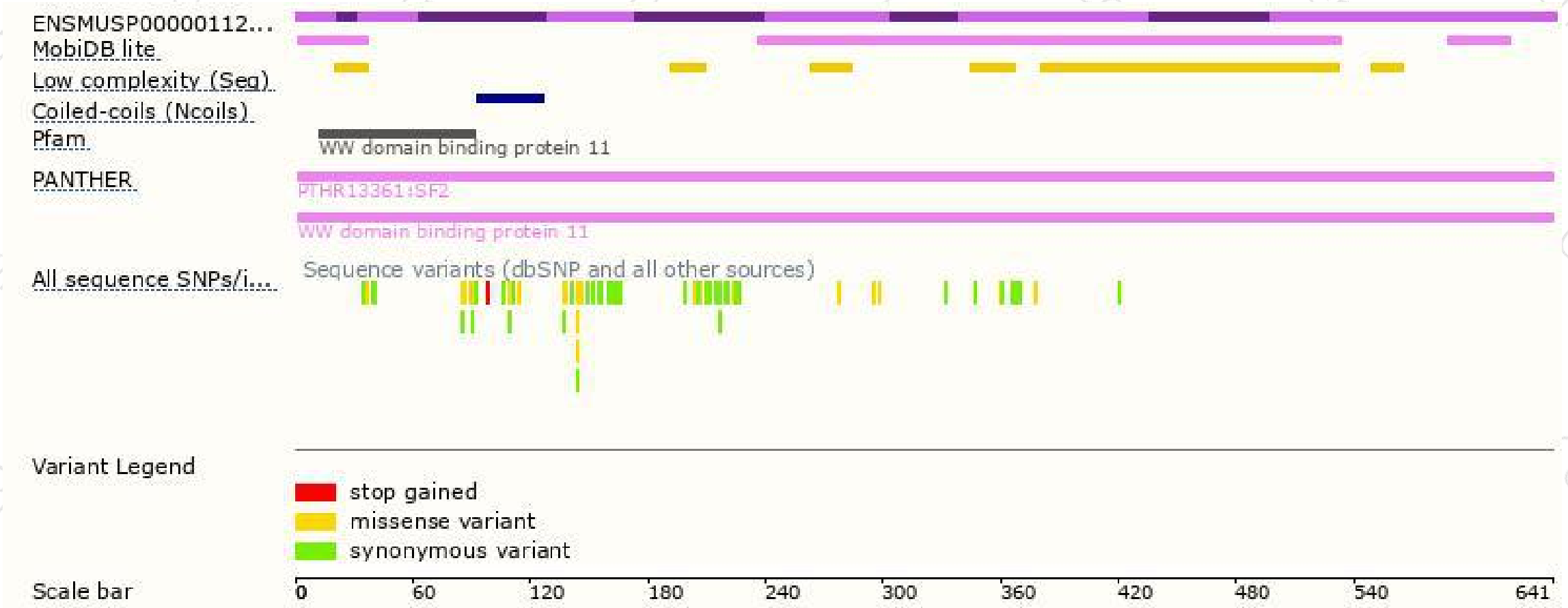
If you have any questions, you are welcome to inquire.
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