

***Med16* Cas9-CKO Strategy**

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Project Overview

Project Name

Med16

Project type

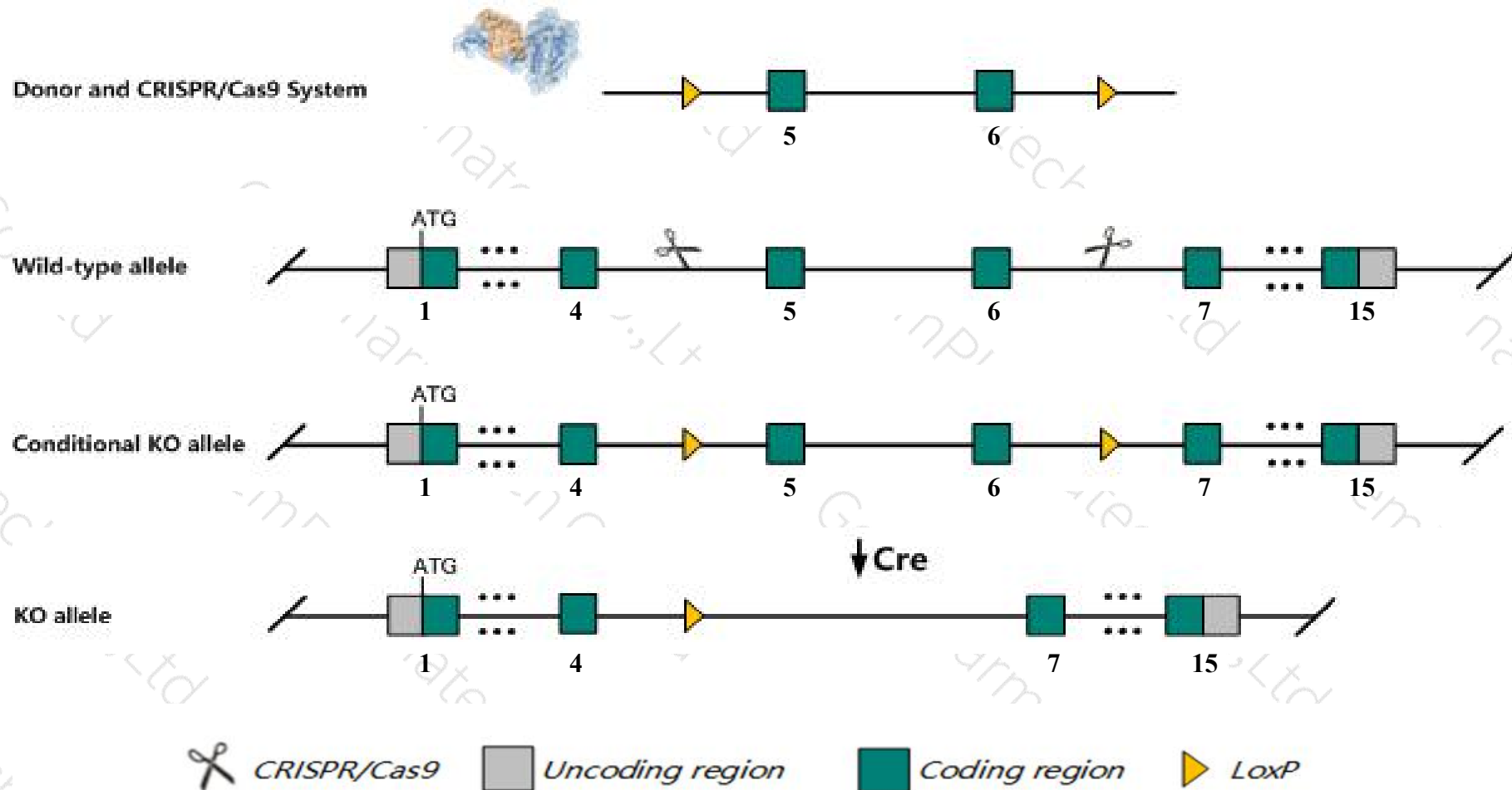
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Med16* gene. The schematic diagram is as follows:



- The *Med16* gene has 7 transcripts. According to the structure of *Med16* gene, exon5-exon6 of *Med16-204* (ENSMUST00000165684.7) transcript is recommended as the knockout region. The region contains 538bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Med16* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA 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 will be 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.

- The *Med16* 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.
- Transcript *Med16*-206 may not be affected.
- The N-terminal of *Med16* gene will remain 174aa, it may remain the partial function of *Med16* gene.
- 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)

Med16 mediator complex subunit 16 [Mus musculus (house mouse)]

Gene ID: 216154, updated on 3-Feb-2019

Summary



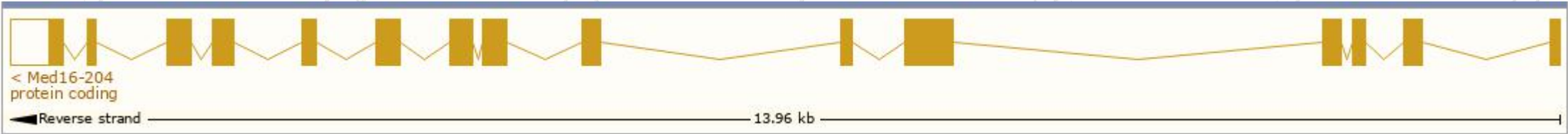
Official Symbol	Med16 provided by MGI
Official Full Name	mediator complex subunit 16 provided by MGI
Primary source	MGI:MGI:2158394
See related	Ensembl:ENSMUSG00000013833
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	95kDa, A630083L04, DRIP92, Thrap5, Trap95
Expression	Ubiquitous expression in testis adult (RPKM 63.2), ovary adult (RPKM 52.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

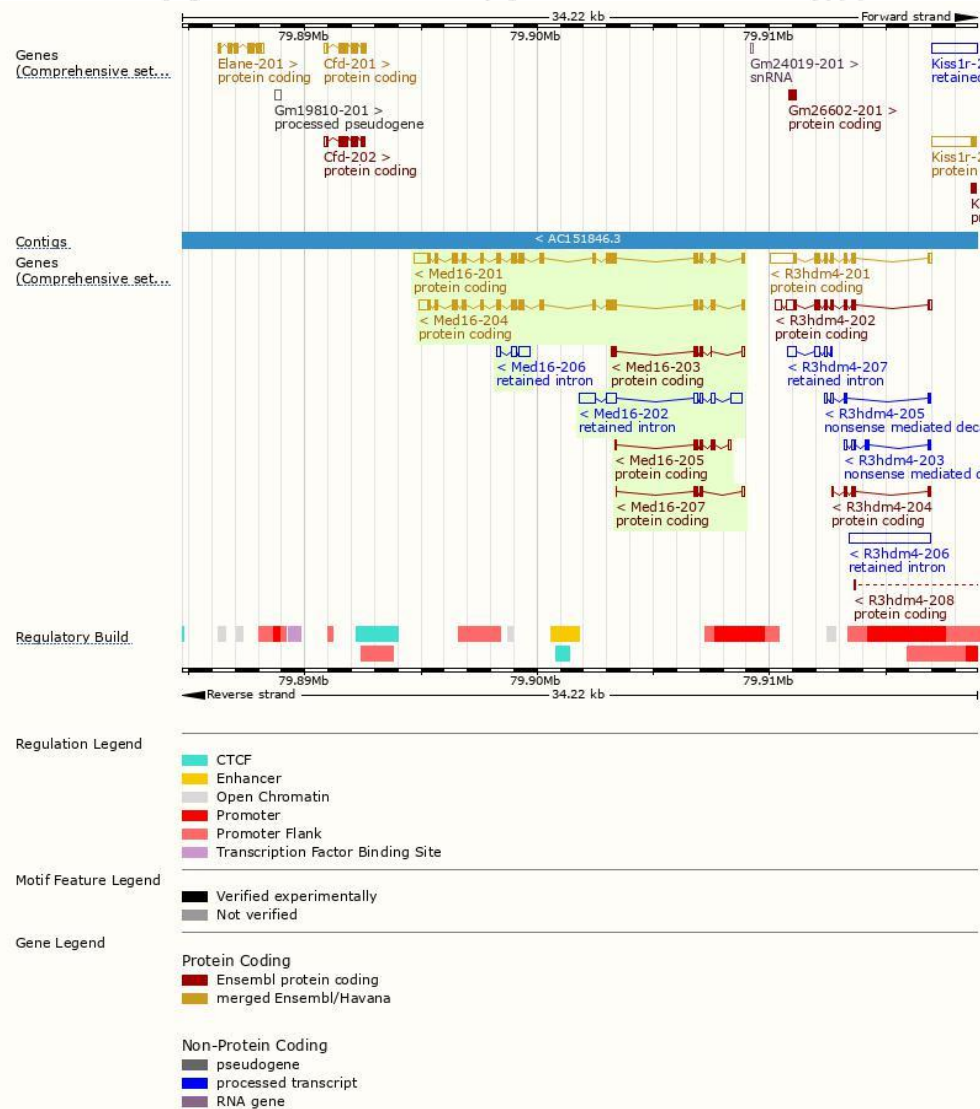
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Med16-201	ENSMUST00000105378.8	3197	864aa	Protein coding	CCDS48623	E9QP84	TSL:1 GENCODE basic APPRIS ALT2
Med16-204	ENSMUST00000165684.7	2950	865aa	Protein coding	CCDS23996	G3UW74	TSL:1 GENCODE basic APPRIS P3
Med16-203	ENSMUST00000164705.7	642	172aa	Protein coding	-	E9PZW4	CDS 3' incomplete TSL:3
Med16-205	ENSMUST00000166964.7	622	162aa	Protein coding	-	E9QAH8	CDS 3' incomplete TSL:3
Med16-207	ENSMUST00000170409.1	431	104aa	Protein coding	-	E9PWX0	CDS 3' incomplete TSL:3
Med16-202	ENSMUST00000163125.1	2065	No protein	Retained intron	-	-	TSL:5
Med16-206	ENSMUST00000170375.1	903	No protein	Retained intron	-	-	TSL:2

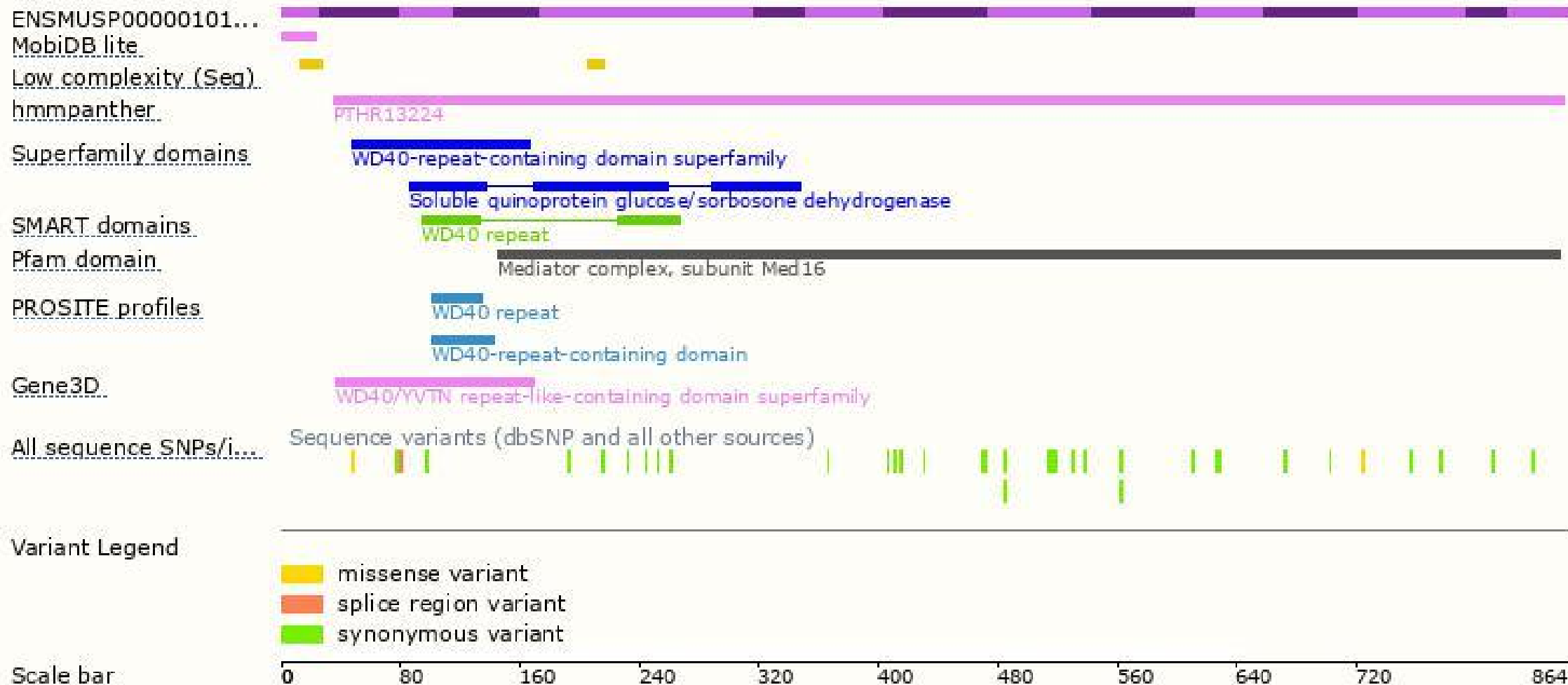
The strategy is based on the design of *Med16-204* transcript,The transcription is shown below



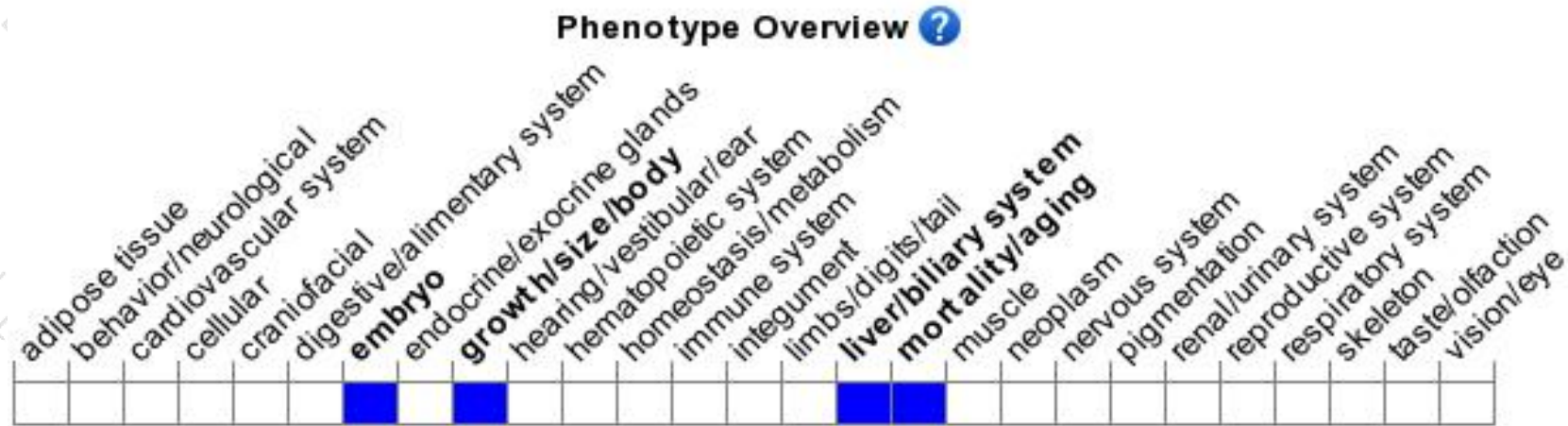
Genomic location distribution



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/>).

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

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