Med15 Cas9-CKO Strategy

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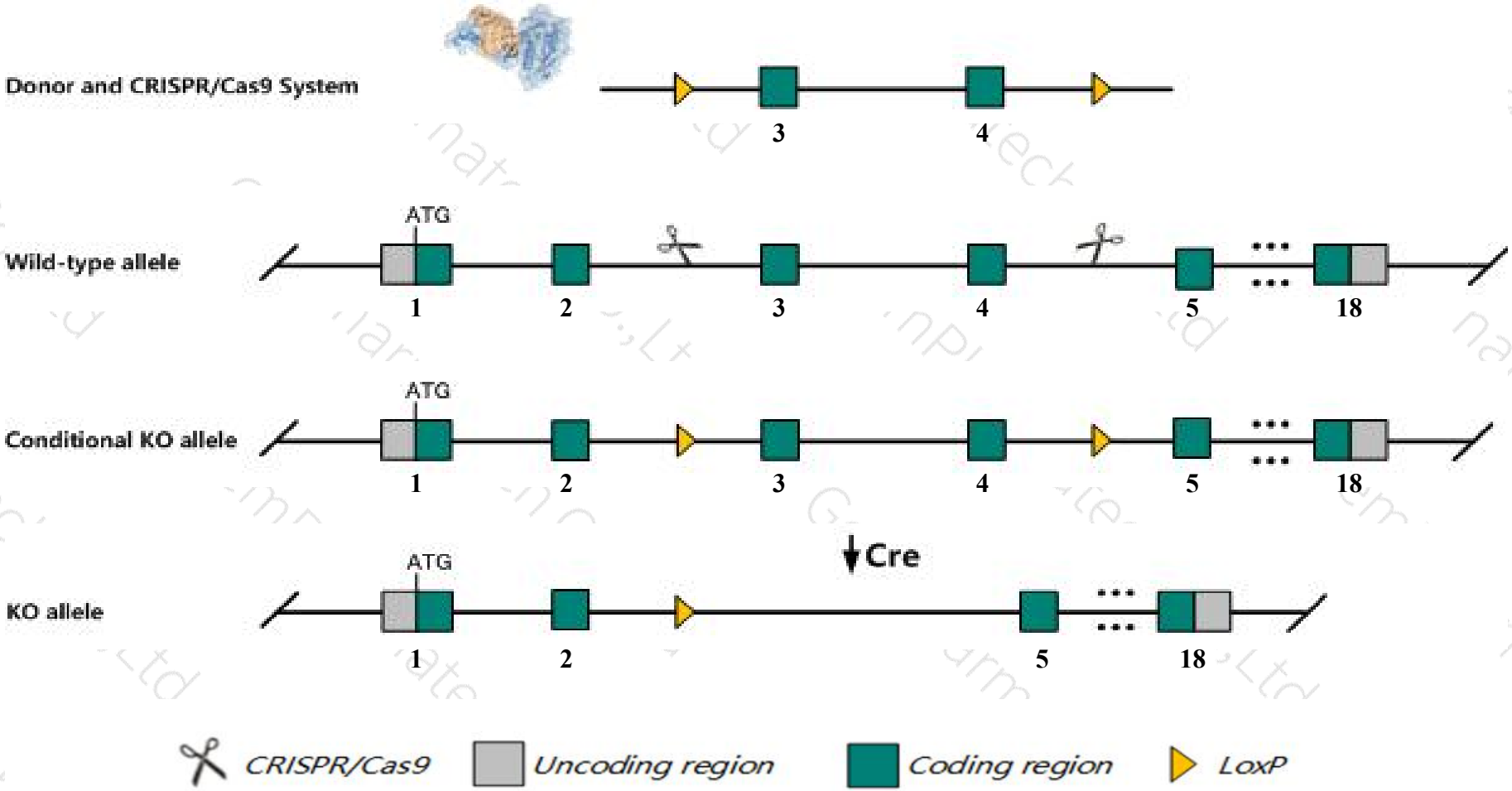
Project Overview

Project Name	***Med15***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Med15* gene. The schematic diagram is as follows:



Technical routes

- The *Med15* gene has 18 transcripts. According to the structure of *Med15* gene, exon3-exon4 of *Med15-201* (ENSMUST00000012259.8) transcript is recommended as the knockout region.The region contains 82bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Med15* gene. The brief process is as follows:CRISPR/Cas9 system 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.

Notice

➢ The *Med15* gene is located on the Chr16. 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）

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Med15 mediator complex subunit 15 [Mus musculus (house mouse)]

Gene ID: 94112, updated on 31-Jan-2019

Summary

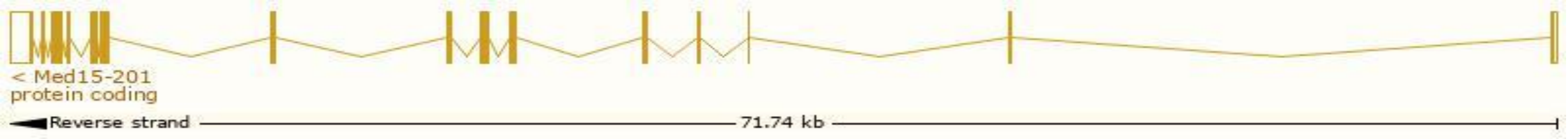
Official Symbol	Med15 provided by MGI
Official Full Name	mediator complex subunit 15 provided by MGI
Primary source	MGI:MGI:2137379
See related	Ensembl:ENSMUSG00000012114
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A230074L19Rik, AW536074, Pcqap, mPcqap
Expression	Ubiquitous expression in thymus adult (RPKM 37.3), small intestine adult (RPKM 28.1) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

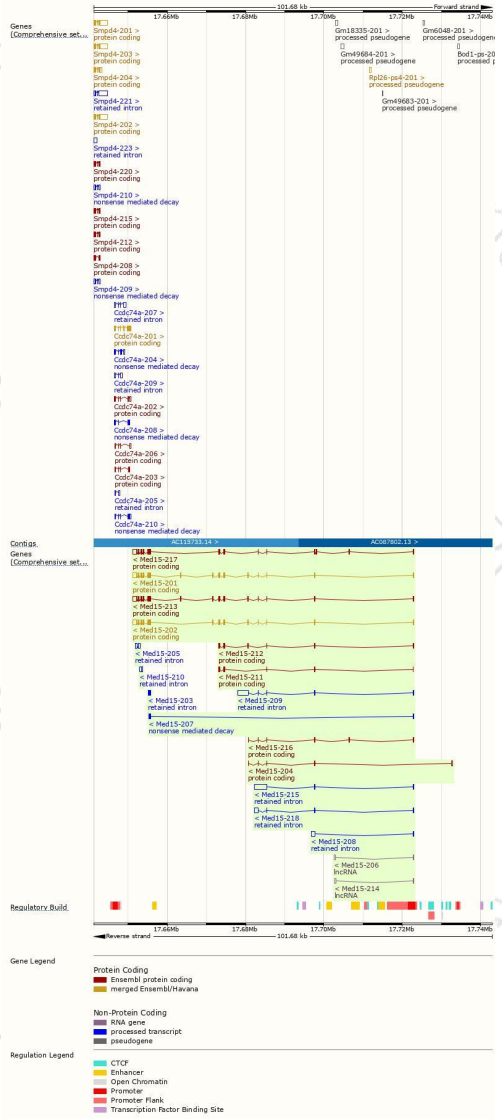
The gene has 18 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Med15-201	ENSMUST00000012259.8	3410	789aa	Protein coding	CCDS37274	Q924H2	TSL:1 GENCODE basic APPRIS P4
Med15-202	ENSMUST00000080936.13	3230	749aa	Protein coding	CCDS37273	E9Q7C1	TSL:1 GENCODE basic APPRIS ALT2
Med15-213	ENSMUST00000232236.1	3404	766aa	Protein coding	-	Q3TE00	GENCODE basic APPRIS ALT2
Med15-217	ENSMUST00000232645.1	3105	639aa	Protein coding	-	A0A338P730	GENCODE basic
Med15-212	ENSMUST00000232202.1	1062	354aa	Protein coding	-	A0A338P6V8	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete
Med15-211	ENSMUST00000232163.1	654	218aa	Protein coding	-	A0A338P6A9	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete
Med15-204	ENSMUST00000231413.1	634	77aa	Protein coding	-	A0A338P6U0	CDS 3' incomplete
Med15-216	ENSMUST00000232431.1	509	87aa	Protein coding	-	A0A338P7G2	CDS 3' incomplete
Med15-207	ENSMUST00000231674.1	421	88aa	Nonsense mediated decay	-	A0A338P7C4	
Med15-215	ENSMUST00000232401.1	3475	No protein	Retained intron	-	-	
Med15-209	ENSMUST00000232005.1	3118	No protein	Retained intron	-	-	
Med15-218	ENSMUST00000232667.1	1189	No protein	Retained intron	-	-	
Med15-208	ENSMUST00000231754.1	1080	No protein	Retained intron	-	-	
Med15-205	ENSMUST00000231480.1	831	No protein	Retained intron	-	-	
Med15-210	ENSMUST00000232012.1	719	No protein	Retained intron	-	-	
Med15-203	ENSMUST00000231231.1	378	No protein	Retained intron	-	-	
Med15-214	ENSMUST00000232312.1	469	No protein	lncRNA	-	-	
Med15-206	ENSMUST00000231494.1	467	No protein	lncRNA	-	-	

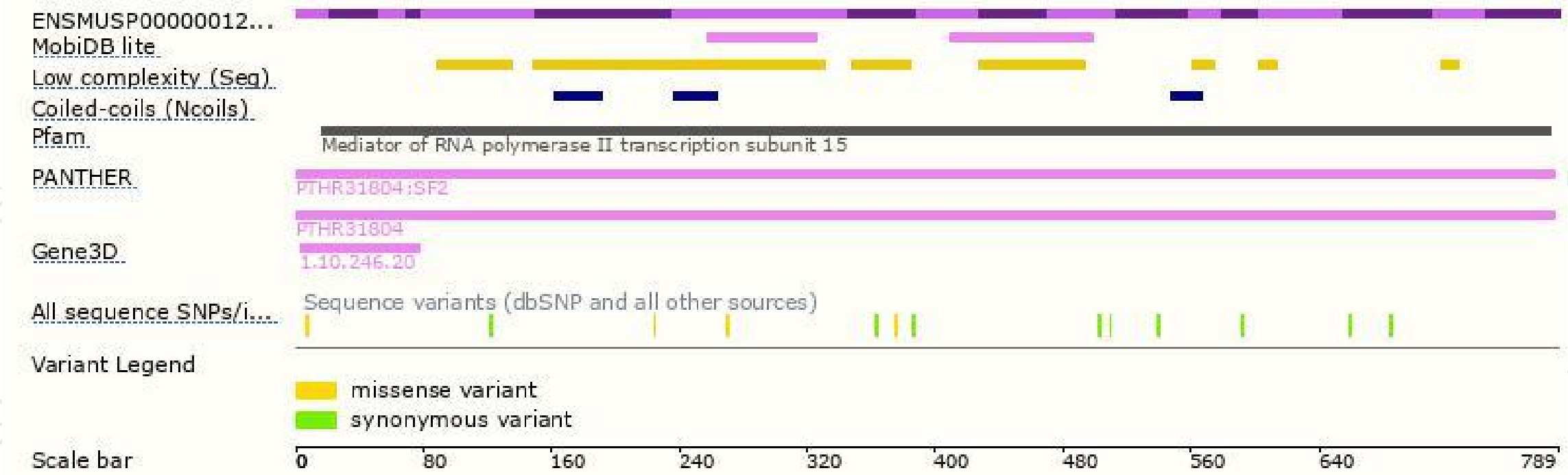
The strategy is based on the design of *Med15-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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