Fbxo43 Cas9-CKO Strategy

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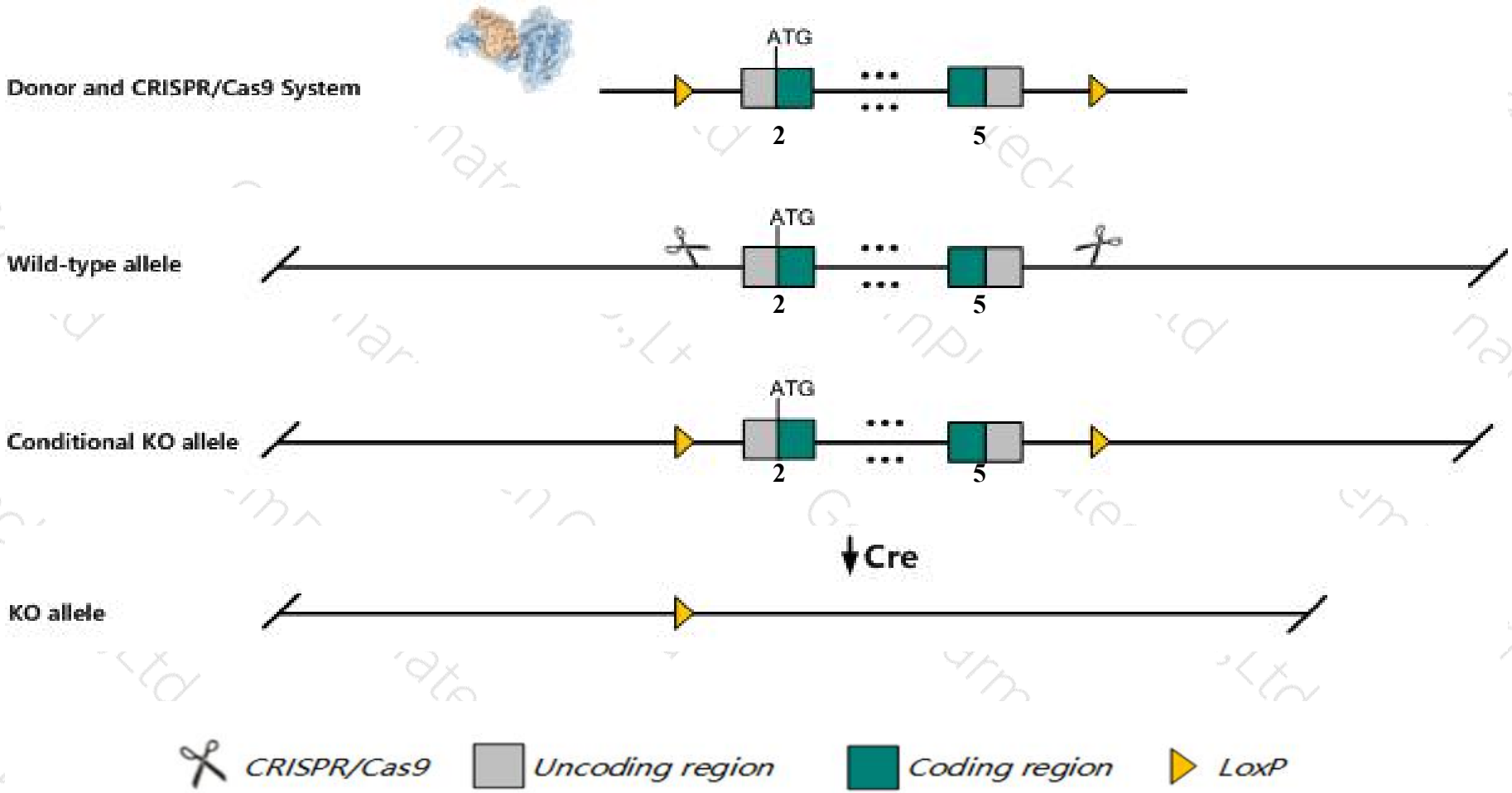
Design Date: 2019-8-1

Project Overview

Project Name	***Fbxo43***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fbxo43* gene. The schematic diagram is as follows:



Technical routes

- The *Fbxo43* gene has 3 transcripts. According to the structure of *Fbxo43* gene, exon2-exon5 of *Fbxo43-201* (ENSMUST00000058643.3) transcript is recommended as the knockout region.The region contains all of the coding sequence.Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Fbxo43* 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

- According to the existing MGI data,Mice homozygous for a knock-out allele exhibit female and male infertility with arrested meiosis.

- The *Fbxo43* gene is located on the Chr15. 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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Fbxo43 F-box protein 43 [Mus musculus (house mouse)]

Gene ID: 78803, updated on 14-Feb-2019

Summary

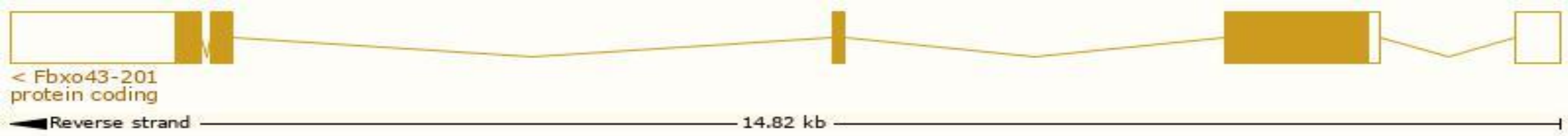
Official Symbol	Fbxo43 provided by MGI
Official Full Name	F-box protein 43 provided byMGI
Primary source	MGI:MGI:1926053
See related	Ensembl:ENSMUSG00000048230
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4930533G20Rik, Emi2
Expression	Restricted expression toward testis adult (RPKM 3.7)See more
Orthologs	human all

Transcript information（Ensembl）

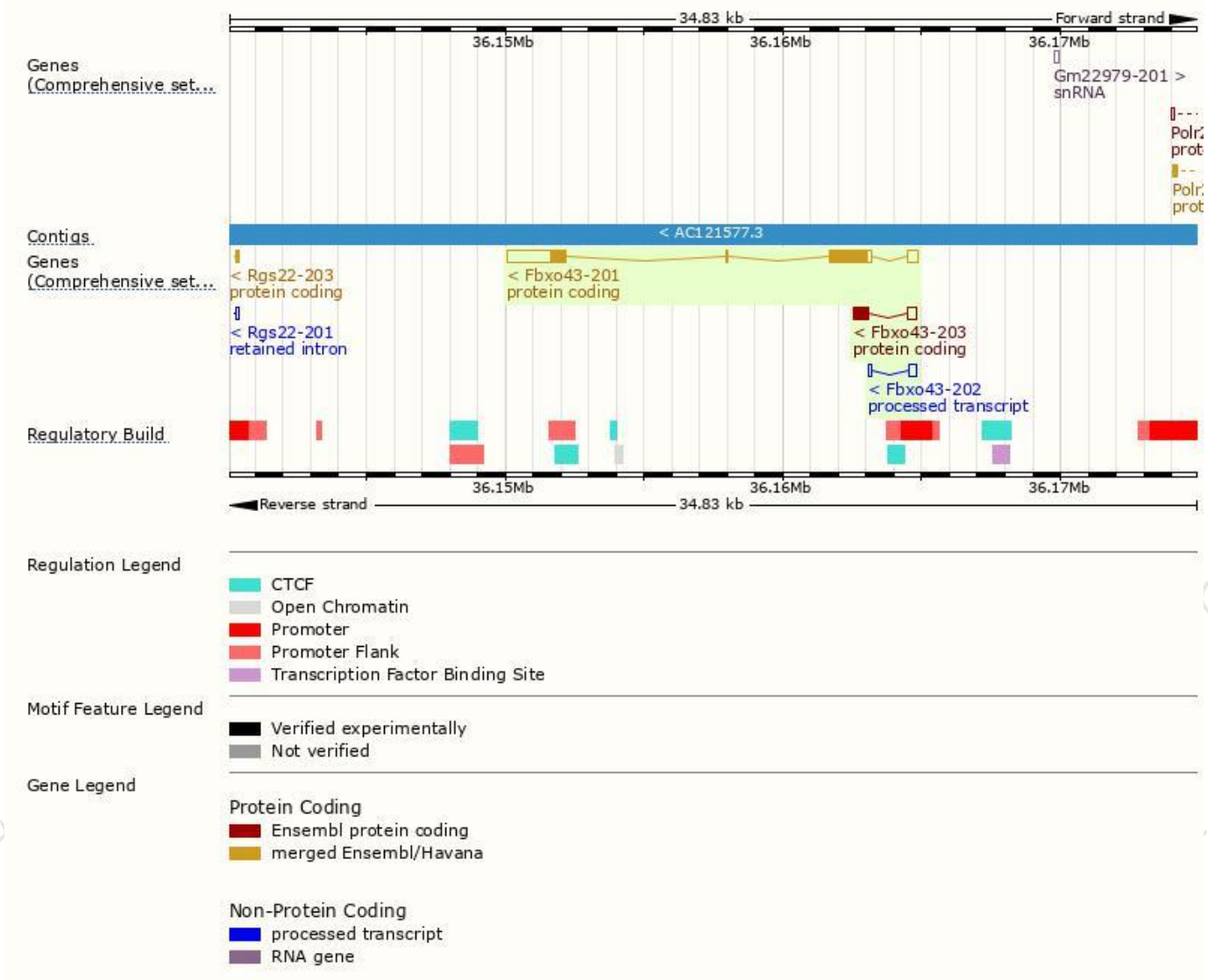
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fbxo43-201	ENSMUST00000058643.3	4035	641aa	Protein coding	CCDS37060	G3X9B2	TSL:1 GENCODE basic APPRIS P1
Fbxo43-203	ENSMUST00000227793.1	889	162aa	Protein coding	-	A0A2I3BQX6	CDS 3' incomplete
Fbxo43-202	ENSMUST00000227781.1	373	No protein	Processed transcript	-	-	

The strategy is based on the design of *Fbxo43-201* transcript,The transcription is shown below

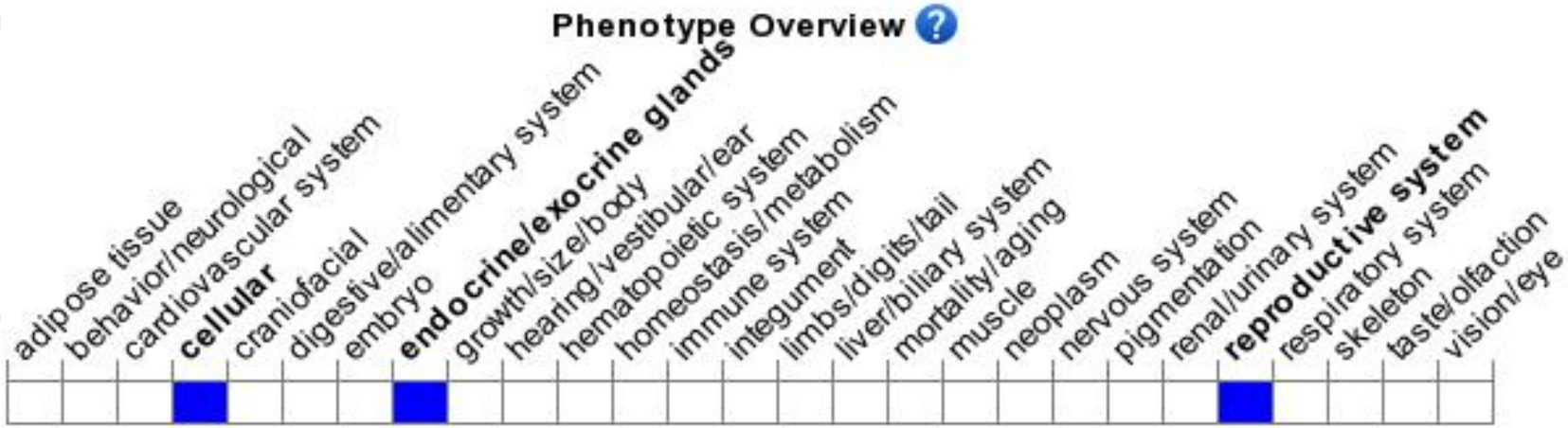


Genomic location distribution



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/).

According to the existing MGI data,Mice homozygous for a knock-out allele exhibit female and male infertility with arrested meiosis.

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

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