Fbxo11 Cas9-KO Strategy

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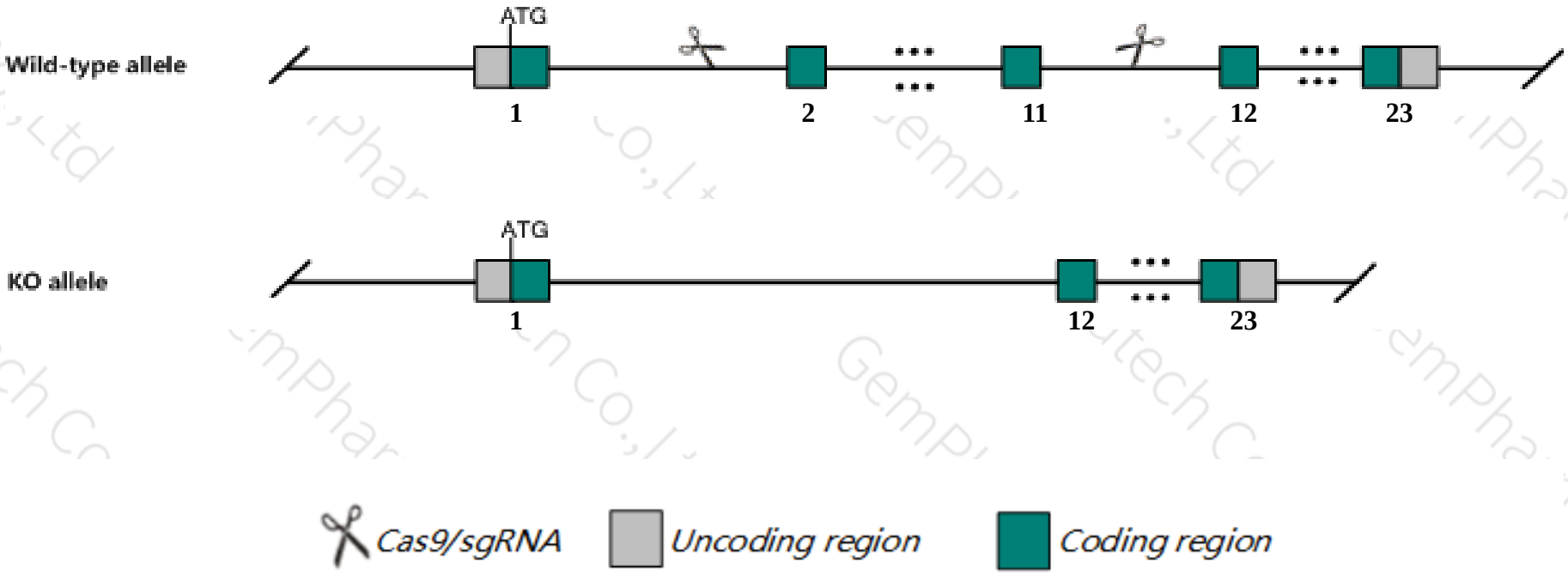
Design Date: 2018/6/4

Project Overview

Project Name	***Fbxo11***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fbxo11* gene. The schematic diagram is as follows:



Technical routes

➢ The *Fbxo11* gene has 6 transcripts. According to the structure of *Fbxo11* gene, exon2-exon11 of *Fbxo11-201* (ENSMUST00000005504.14) transcript is recommended as the knockout region.The region contains 1163bp coding sequenc Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Fbxo11* 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

- According to the existing MGI data,Mice homozygous for ENU-induced mutations exhibit cleft palate, facial clefting, and perinatal lethality. Mice homozygous for a knock-out allele show neonatal lethality, thick epidermis, decreased hair follicle number, absent keratohyalin granules, and increased epidermal Snail protein levels.

- The *Fbxo11* gene is located on the Chr17. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information （NCBI）

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Fbxo11 F-box protein 11 [*Mus musculus* (house mouse)]

Gene ID: 225055, updated on 17-Aug-2019

Summary

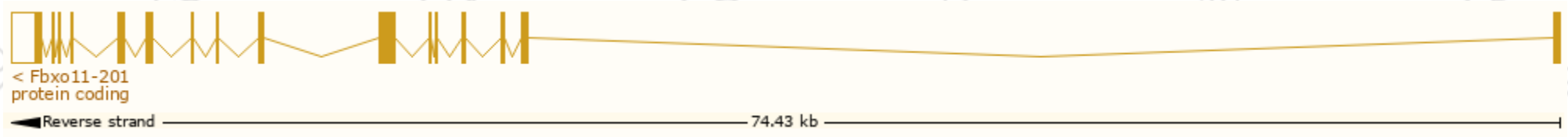
Official Symbol	Fbxo11 provided by MGI
Official Full Name	F-box protein 11 provided by MGI
Primary source	MGI:MGI:2147134
See related	Ensembl:ENSMUSG00000005371
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Jf; C80048
Expression	Ubiquitous expression in CNS E14 (RPKM 23.5), whole brain E14.5 (RPKM 20.3) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

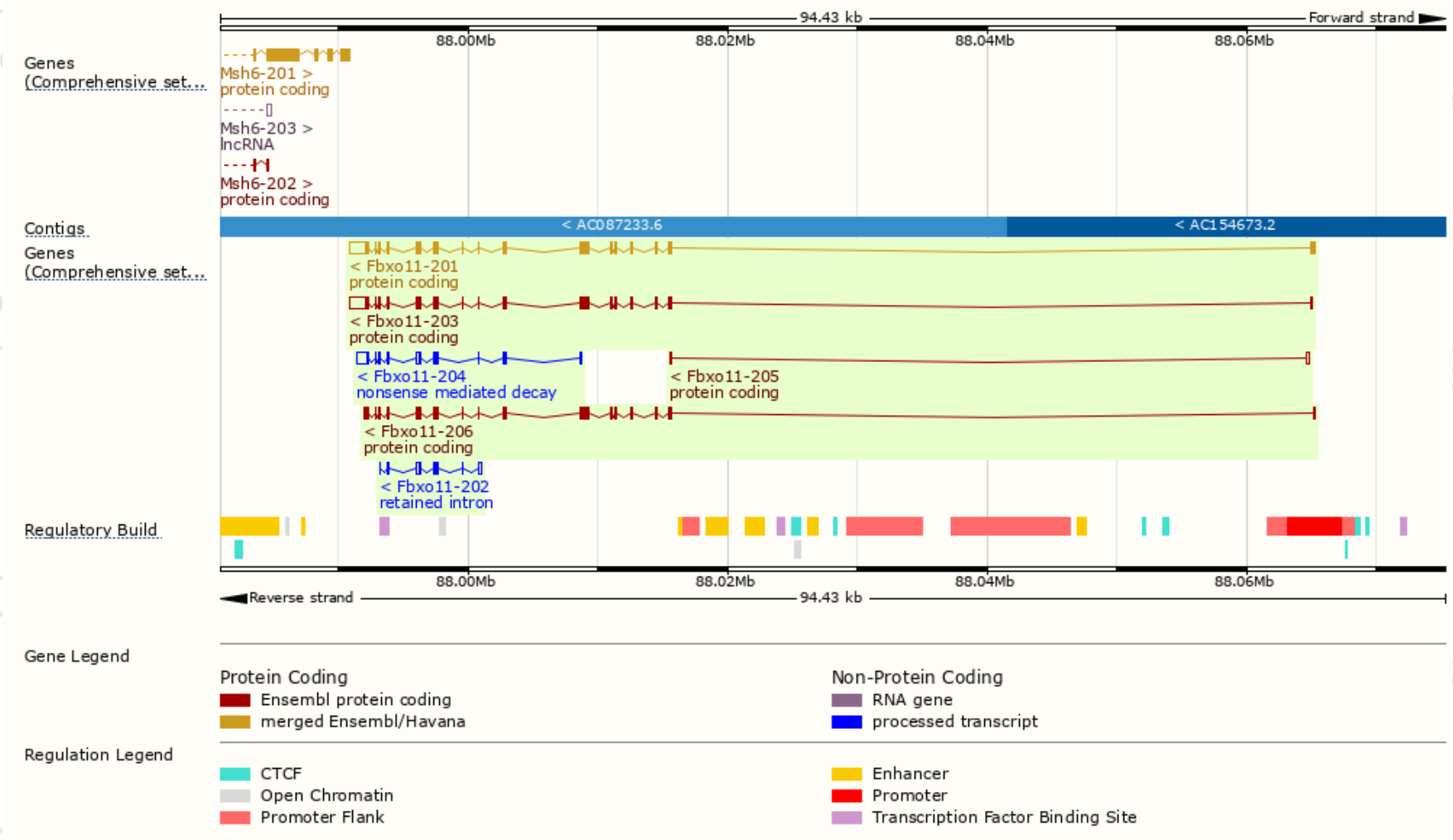
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fbxo11-201	ENSMUST00000005504.14	4019	930aa	Protein coding	CCDS37717	Q7TPD1	TSL:5 GENCODE basic
Fbxo11-203	ENSMUST00000130379.8	3753	842aa	Protein coding	-	F6T356	TSL:1 GENCODE basic APPRIS P1
Fbxo11-206	ENSMUST00000235112.1	2657	842aa	Protein coding	-	-	GENCODE basic APPRIS P1
Fbxo11-205	ENSMUST00000235056.1	371	33aa	Protein coding	-	-	CDS 3' incomplete
Fbxo11-204	ENSMUST00000135639.7	2022	137aa	Nonsense mediated decay	-	S4R2I0	CDS 5' incomplete TSL:5
Fbxo11-202	ENSMUST00000127334.1	889	No protein	Retained intron	-	-	TSL:5

The strategy is based on the design of *Fbxo11-201* transcript,The transcription is shown below

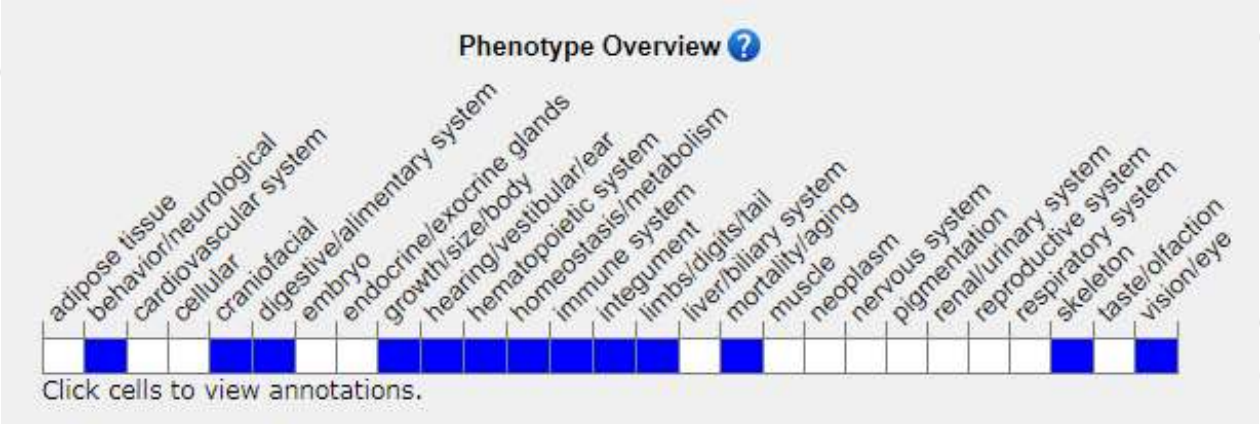


Genomic location distribution



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/).

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

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