Zfp473 Cas9-KO Strategy

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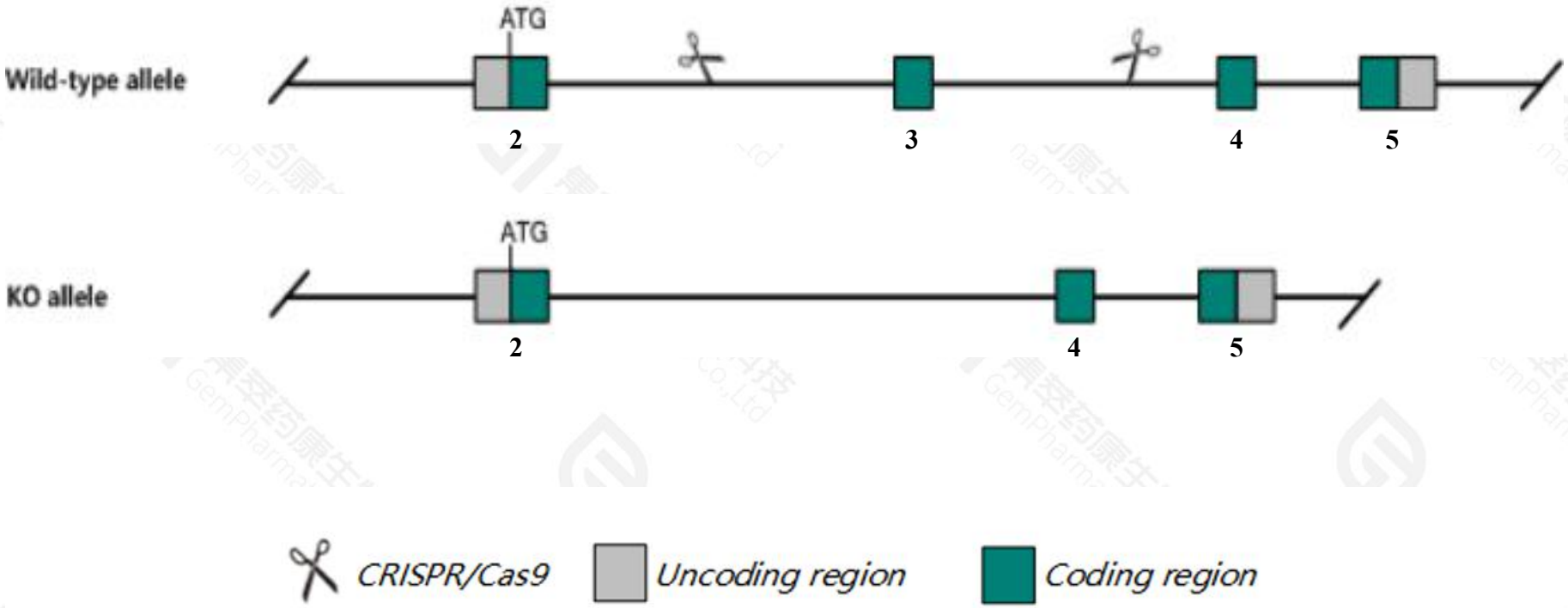
Project Overview

Project Name	***Zfp473***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp473* gene. The schematic diagram is as follows:



Technical routes

➢ The *Zfp473* gene has 7 transcripts. According to the structure of *Zfp473* gene, exon3 of *Zfp473-201*(ENSMUST00000060270.13) transcript is recommended as the knockout region.The region contains 133bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Zfp473* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Zfp473* gene is located on the Chr7. 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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Zfp473 zinc finger protein 473 [Mus musculus (house mouse)]

Gene ID: 243963, updated on 17-Nov-2020

Summary

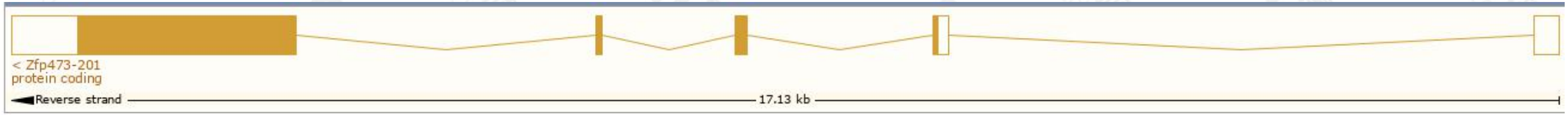
Official Symbol	Zfp473 provided by MGI
Official Full Name	zinc finger protein 473 provided byMGI
Primary source	MGI:MGI:2442697
See related	Ensembl:ENSMUSG00000048012
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	D030014N22Rik, Znf473, zfp-100
Expression	Broad expression in placenta adult (RPKM 2.1), testis adult (RPKM 0.6) and 18 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

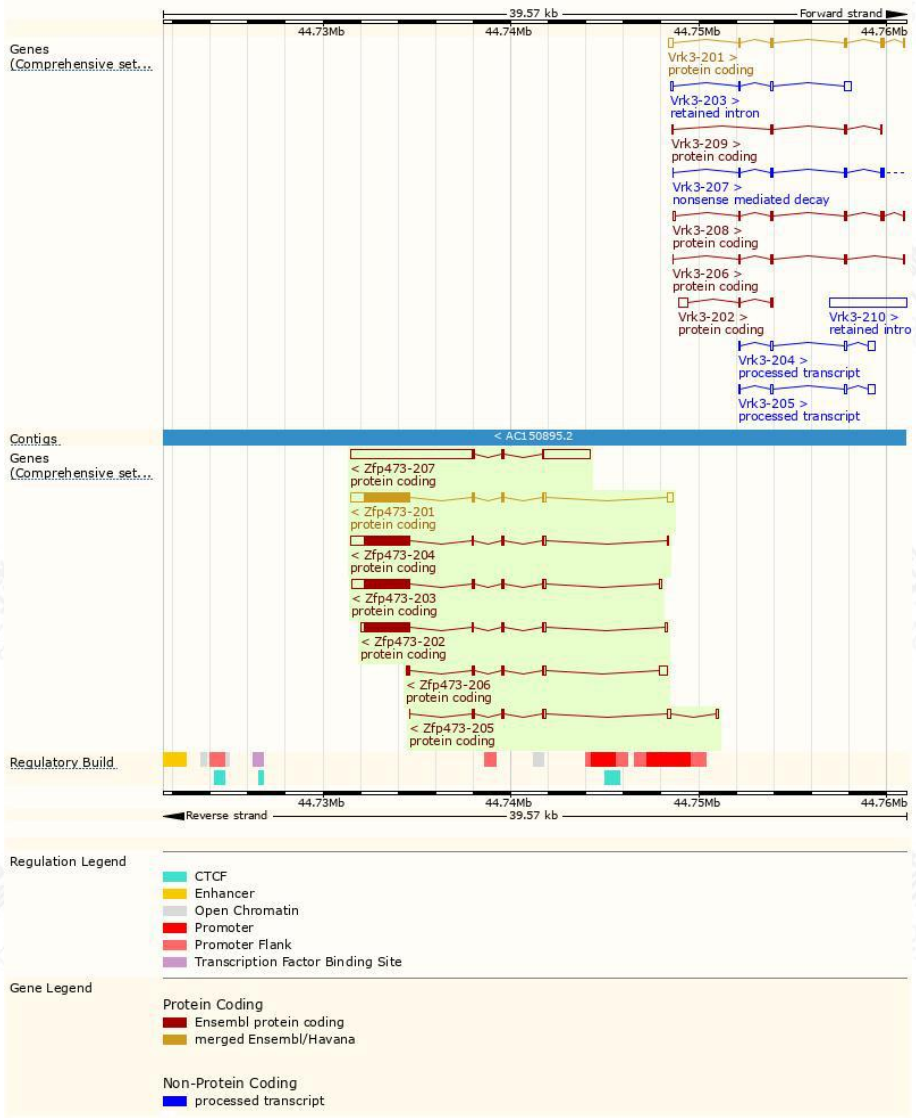
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp473-201	ENSMUST00000060270.13	3800	892aa	Protein coding	CCDS21213		TSL:1 , GENCODE basic , APPRIS P3 ,
Zfp473-203	ENSMUST00000120074.8	3624	892aa	Protein coding	CCDS21213		TSL:1 , GENCODE basic , APPRIS P3 ,
Zfp473-204	ENSMUST00000120798.8	3559	891aa	Protein coding	CCDS71952		TSL:1 , GENCODE basic , APPRIS ALT2 ,
Zfp473-202	ENSMUST00000118162.8	3091	891aa	Protein coding	CCDS71952		TSL:1 , GENCODE basic , APPRIS ALT2 ,
Zfp473-207	ENSMUST00000149011.9	9230	103aa	Protein coding	-		TSL:1 , GENCODE basic ,
Zfp473-206	ENSMUST00000140599.9	1006	149aa	Protein coding	-		CDS 3' incomplete , TSL:2 ,
Zfp473-205	ENSMUST00000126366.3	698	99aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,

The strategy is based on the design of *Zfp473-201* 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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