

***Zbed3* Cas9-KO Strategy**

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Project Overview

Project Name

Zbed3

Project type

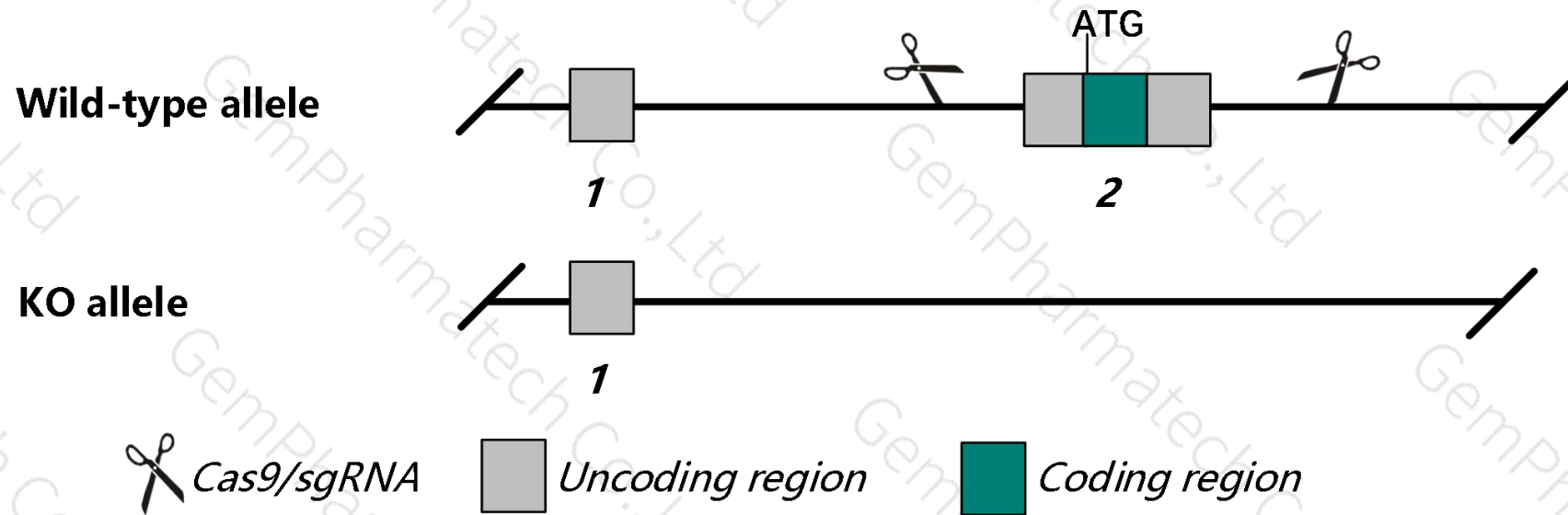
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zbed3* gene. The schematic diagram is as follows:



- The *Zbed3* gene has 3 transcripts. According to the structure of *Zbed3* gene, exon2 of *Zbed3*-202(ENSMUST00000221807.1) 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 *Zbed3* 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.

- The *Zbed3* gene is located on the Chr13. 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)

Zbed3 zinc finger, BED type containing 3 [Mus musculus (house mouse)]

Gene ID: 72114, updated on 13-Mar-2020

Summary



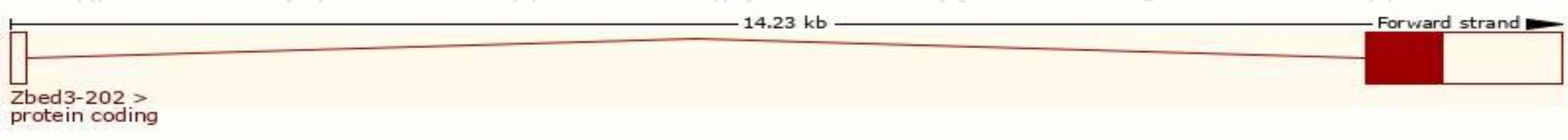
Official Symbol	Zbed3 provided by MGI
Official Full Name	zinc finger, BED type containing 3 provided by MGI
Primary source	MGI:MGI:1919364
See related	Ensembl:ENSMUSG00000041995
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	0610037K01Rik, 2610005H11Rik, AU018975, AU024588
Summary	This gene encodes a member of the zinc finger protein superfamily. This protein may regulate the Wnt/beta-catenin signaling pathway. This protein may be involved in insulin resistance and type 2 diabetes in humans. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Oct 2014]
Expression	Broad expression in ovary adult (RPKM 63.5), limb E14.5 (RPKM 22.0) and 22 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

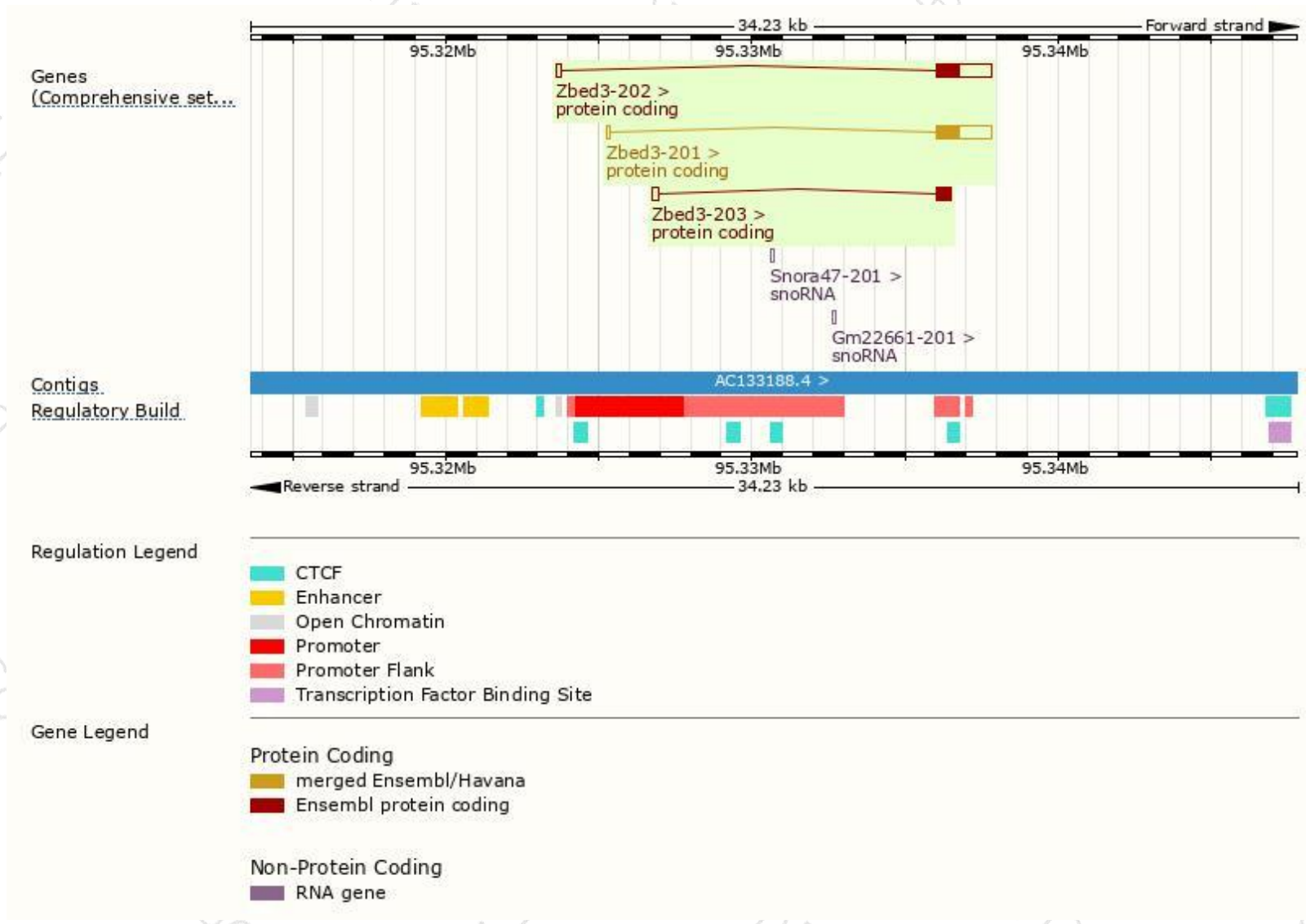
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zbed3-202	ENSMUST00000221807.1	1945	228aa	Protein coding	CCDS26696	Q9D0L1	TSL:1 GENCODE basic APPRIS P1
Zbed3-201	ENSMUST00000045909.7	1894	228aa	Protein coding	CCDS26696	Q9D0L1	TSL:1 GENCODE basic APPRIS P1
Zbed3-203	ENSMUST00000222456.1	650	152aa	Protein coding	-	A0A1Y7VIM9	CDS 3' incomplete TSL:2

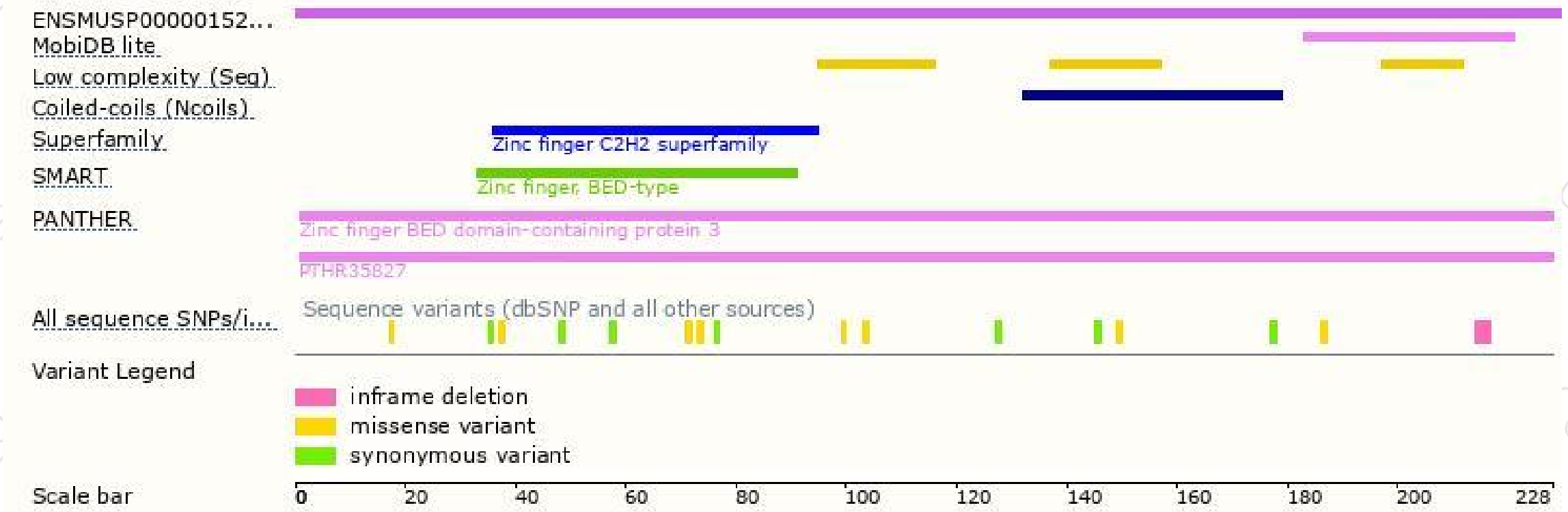
The strategy is based on the design of *Zbed3-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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