

***Zbtb10* Cas9-CKO Strategy**

Designer: Jia Yu

Reviewer: Xiaojing Li

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Project Overview

Project Name

Zbtb10

Project type

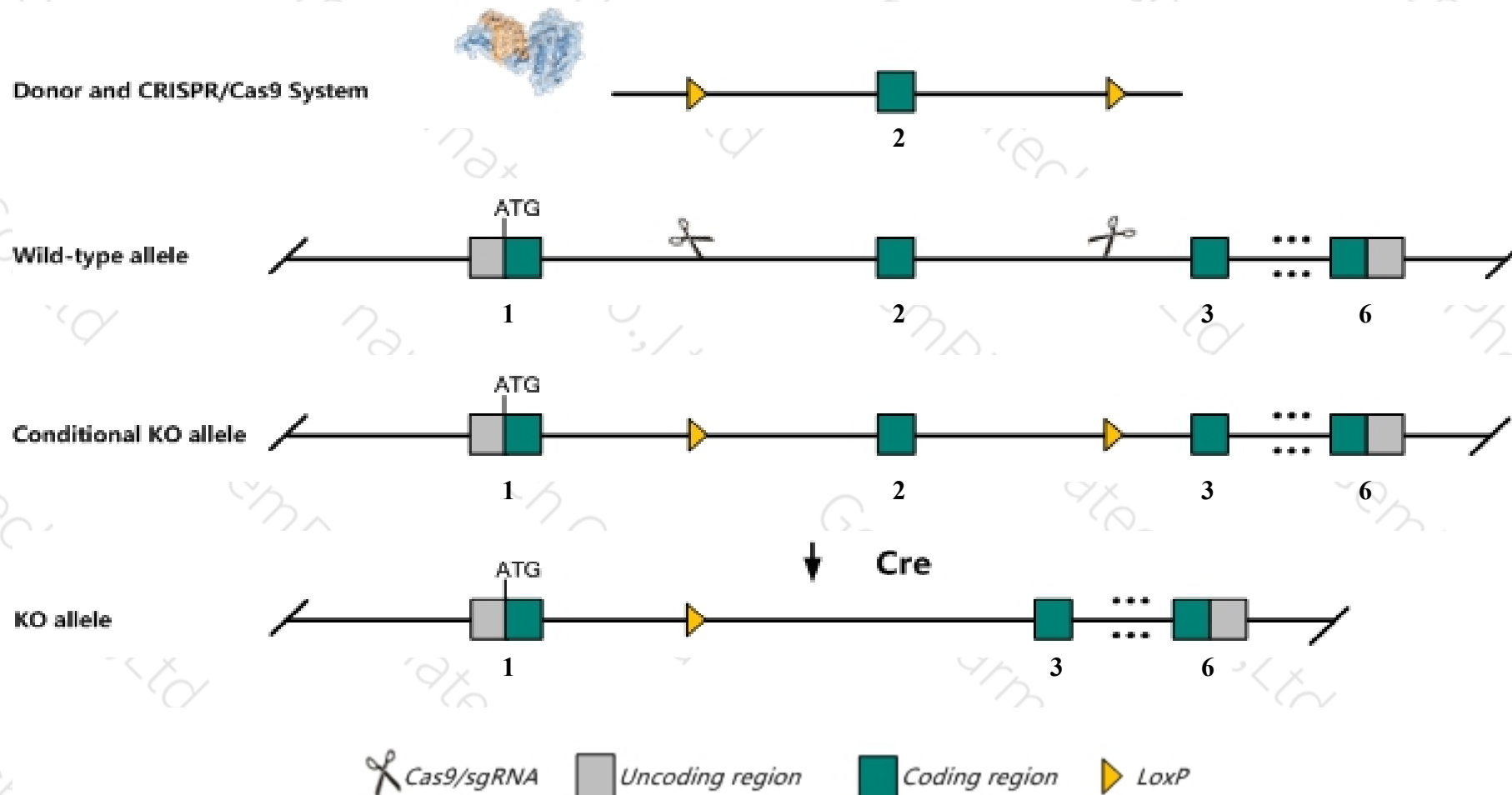
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zbtb10* gene. The schematic diagram is as follows:



- The *Zbtb10* gene has 1 transcript. According to the structure of *Zbtb10* gene, exon2 of *Zbtb10*-201(ENSMUST00000155203.1) transcript is recommended as the knockout region. The region contains 886bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zbtb10* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- The *Zbtb10* gene is located on the Chr3. 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.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- 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)

Zbtb10 zinc finger and BTB domain containing 10 [Mus musculus (house mouse)]

Gene ID: 229055, updated on 13-Mar-2020

Summary



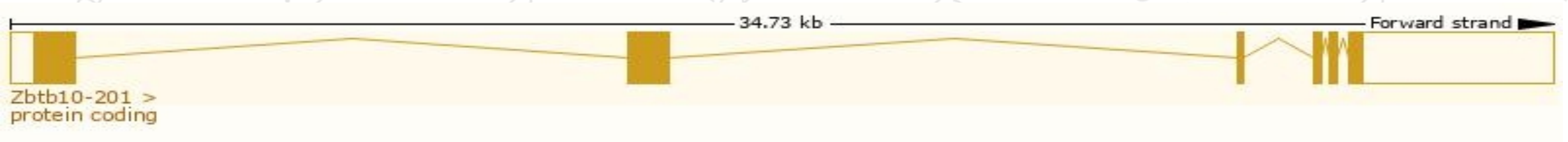
Official Symbol	Zbtb10 provided by MGI
Official Full Name	zinc finger and BTB domain containing 10 provided by MGI
Primary source	MGI:MGI:2139883
See related	Ensembl:ENSMUSG00000069114
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4832414A18, AU021107, RINZF
Expression	Broad expression in placenta adult (RPKM 9.7), CNS E11.5 (RPKM 3.6) and 18 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

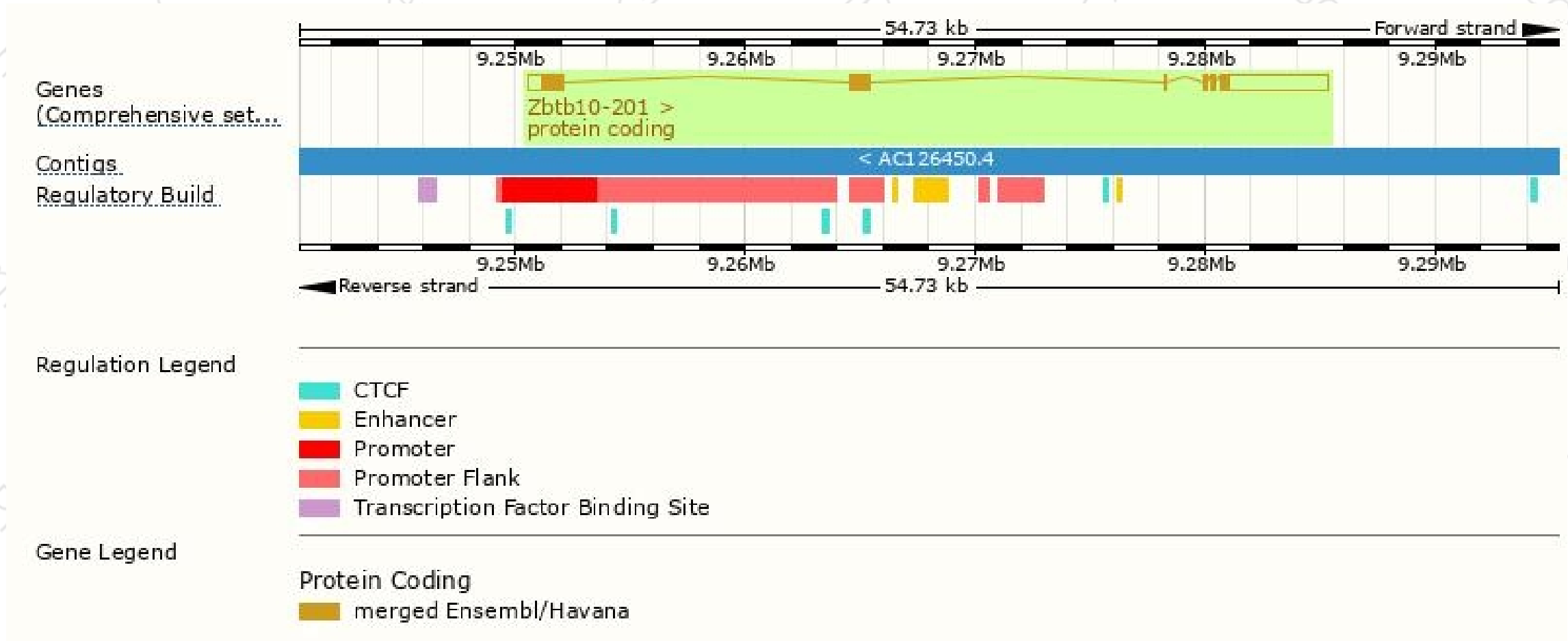
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zbtb10-201	ENSMUST00000155203.1	7414	861aa	Protein coding	CCDS50861	E9Q8X5	TSL:5 GENCODE basic APPRIS P1

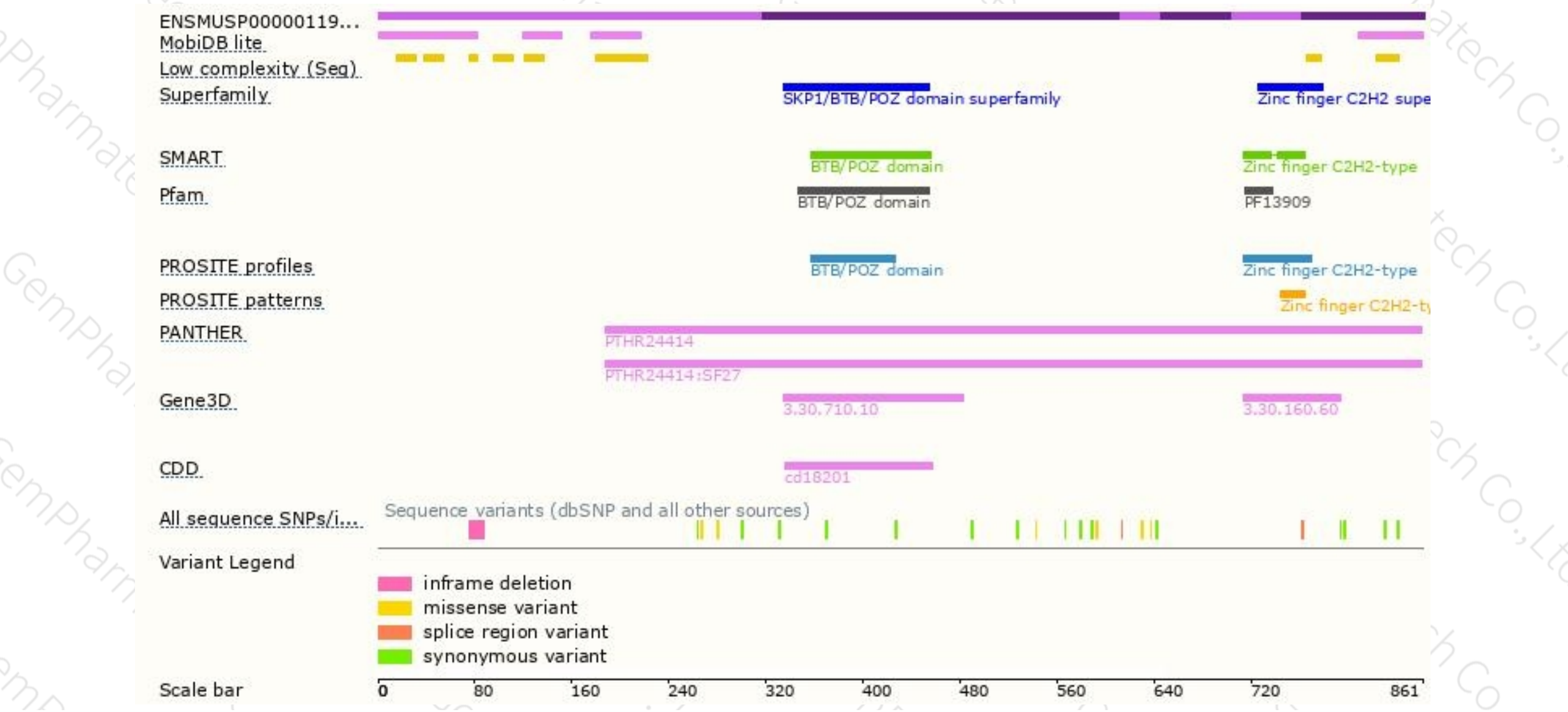
The strategy is based on the design of *Zbtb10-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

