

Htra3 Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Htra3

Project type

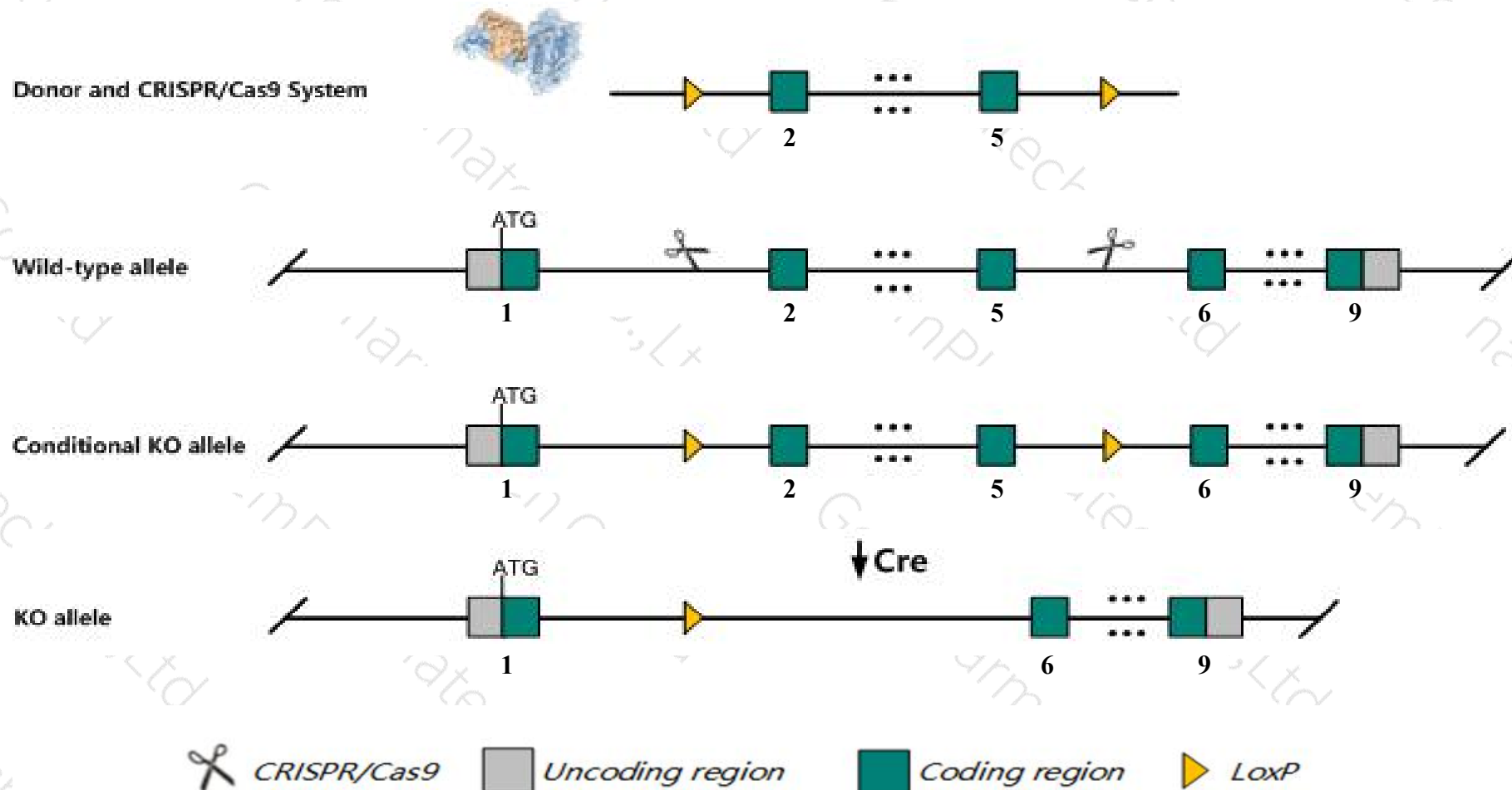
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Htra3* gene. The schematic diagram is as follows:



- The *Htra3* gene has 6 transcripts. According to the structure of *Htra3* gene, exon2-exon5 of *Htra3-201* (ENSMUST00000087629.9) transcript is recommended as the knockout region. The region contains 551bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Htra3* 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

- The *Htra3* gene is located on the Chr5. 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)

Htra3 HtrA serine peptidase 3 [Mus musculus (house mouse)]

Gene ID: 78558, updated on 31-Jan-2019

Summary



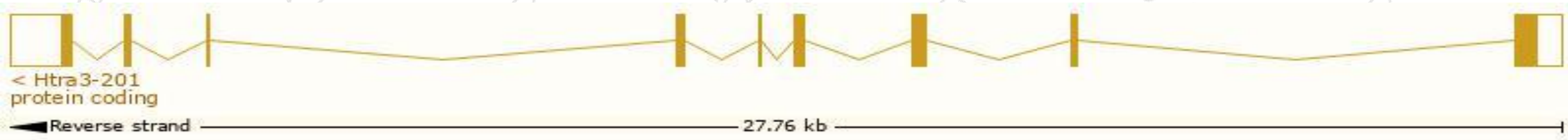
Official Symbol	Htra3 provided by MGI
Official Full Name	HtrA serine peptidase 3 provided by MGI
Primary source	MGI:MGI:1925808
See related	Ensembl:ENSMUSG00000029096
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2210021K23Rik, 9530081K03Rik, Prsp, Tasp
Expression	Biased expression in mammary gland adult (RPKM 98.7), subcutaneous fat pad adult (RPKM 87.5) and 14 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

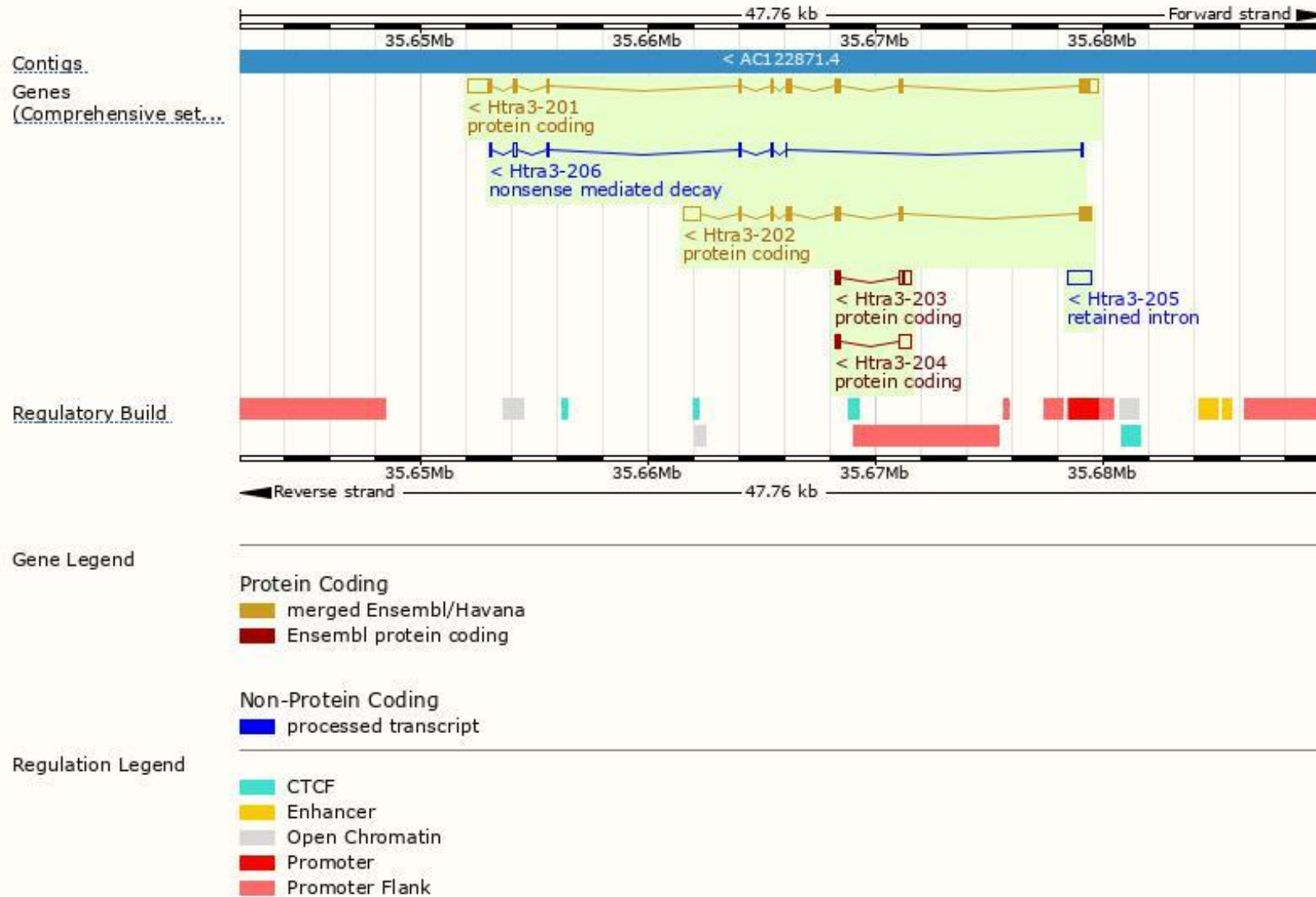
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Htra3-201	ENSMUST00000087629.9	2750	459aa	Protein coding	CCDS19233	Q9D236	TSL:1 GENCODE basic APPRIS P1
Htra3-202	ENSMUST00000114233.2	1901	363aa	Protein coding	CCDS39071	Q9D236	TSL:1 GENCODE basic
Htra3-204	ENSMUST00000137935.1	698	41aa	Protein coding	-	A0A0J9YU80	CDS 3' incomplete TSL:3
Htra3-203	ENSMUST00000129459.1	641	53aa	Protein coding	-	A0A0J9YV92	CDS 3' incomplete TSL:2
Htra3-206	ENSMUST00000201028.1	551	59aa	Nonsense mediated decay	-	A0A0J9YVC4	CDS 5' incomplete TSL:5
Htra3-205	ENSMUST00000200810.1	1080	No protein	Retained intron	-	-	TSL:NA

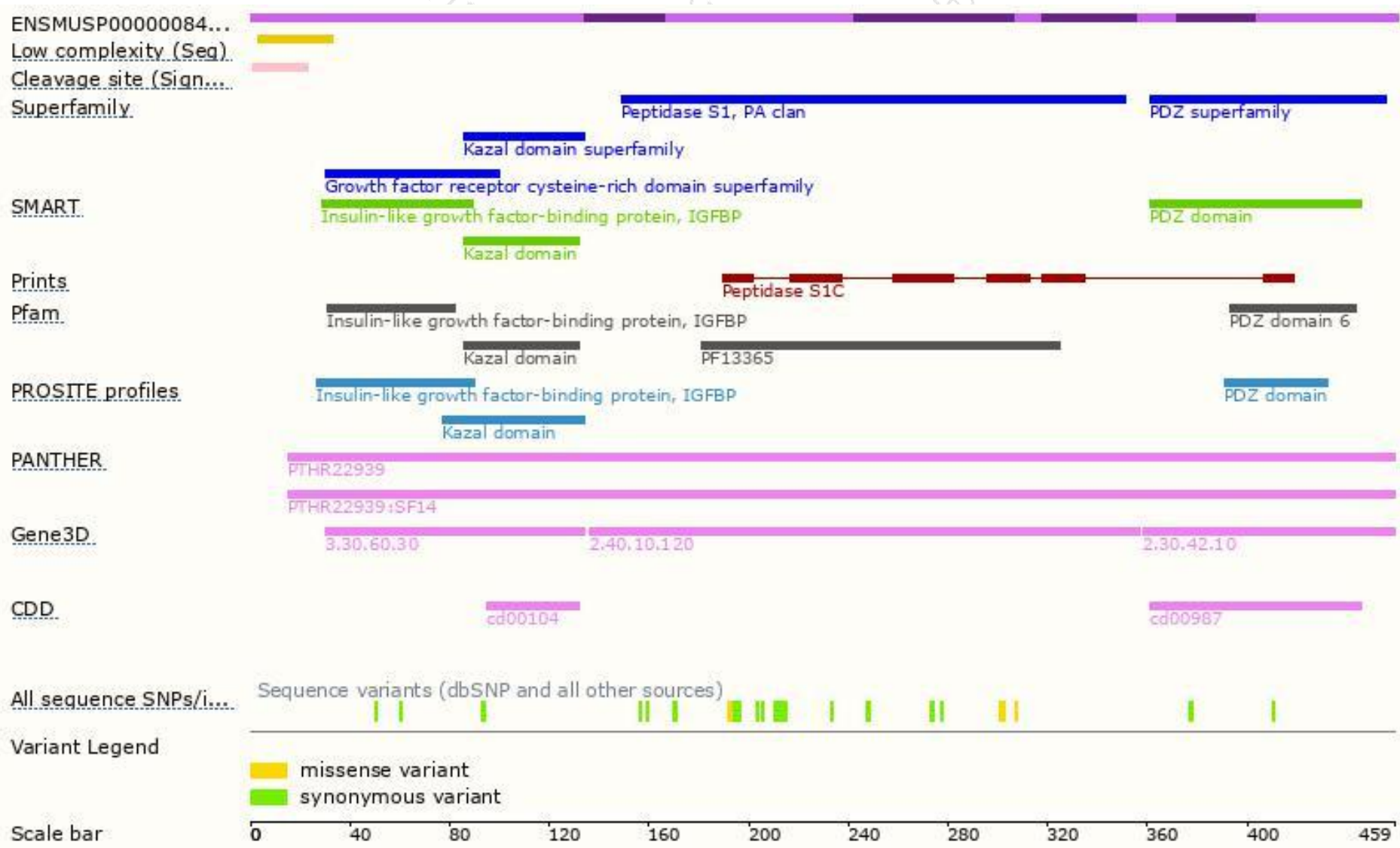
The strategy is based on the design of *Htra3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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