

***Lrit2* Cas9-CKO Strategy**

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Design Date: 2020-9-25

Project Overview

Project Name

Lrit2

Project type

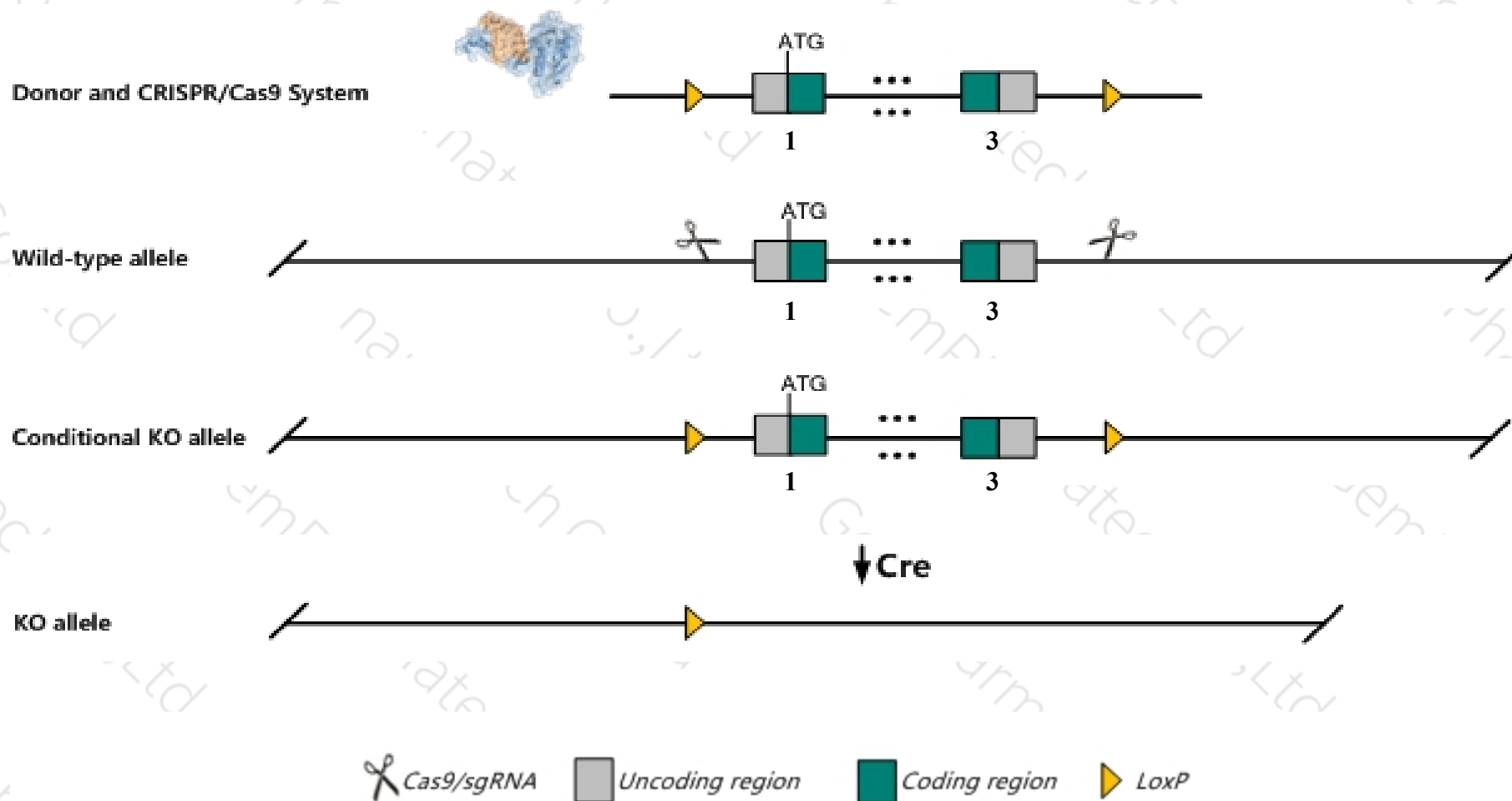
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lrit2* gene. The schematic diagram is as follows:



- The *Lrit2* gene has 2 transcripts. According to the structure of *Lrit2* gene, exon1-exon3 of *Lrit2*-201(ENSMUST00000057176.4) 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 *Lrit2* 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 *Lrit2* gene is located on the Chr14. 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)

Lrit2 leucine-rich repeat, immunoglobulin-like and transmembrane domains 2 [Mus musculus (house mouse)]

Gene ID: 239038, updated on 13-Mar-2020

Summary



Official Symbol Lrit2 provided by [MGI](#)

Official Full Name leucine-rich repeat, immunoglobulin-like and transmembrane domains 2 provided by [MGI](#)

Primary source [MGI:MGI:2444885](#)

See related [Ensembl:ENSMUSG00000043418](#)

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 A930010E21Rik, Lrrc22

Expression Restricted expression toward liver adult (RPKM 1.3)[See more](#)

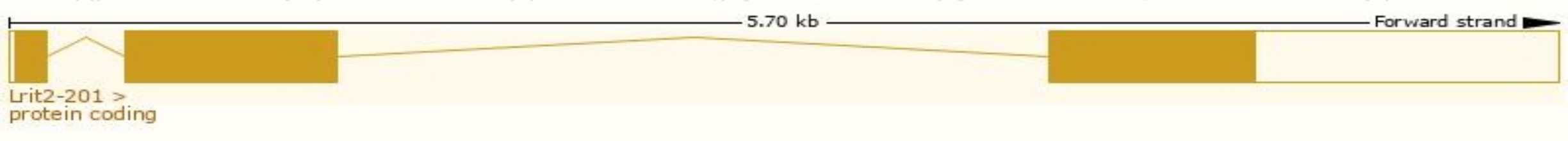
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

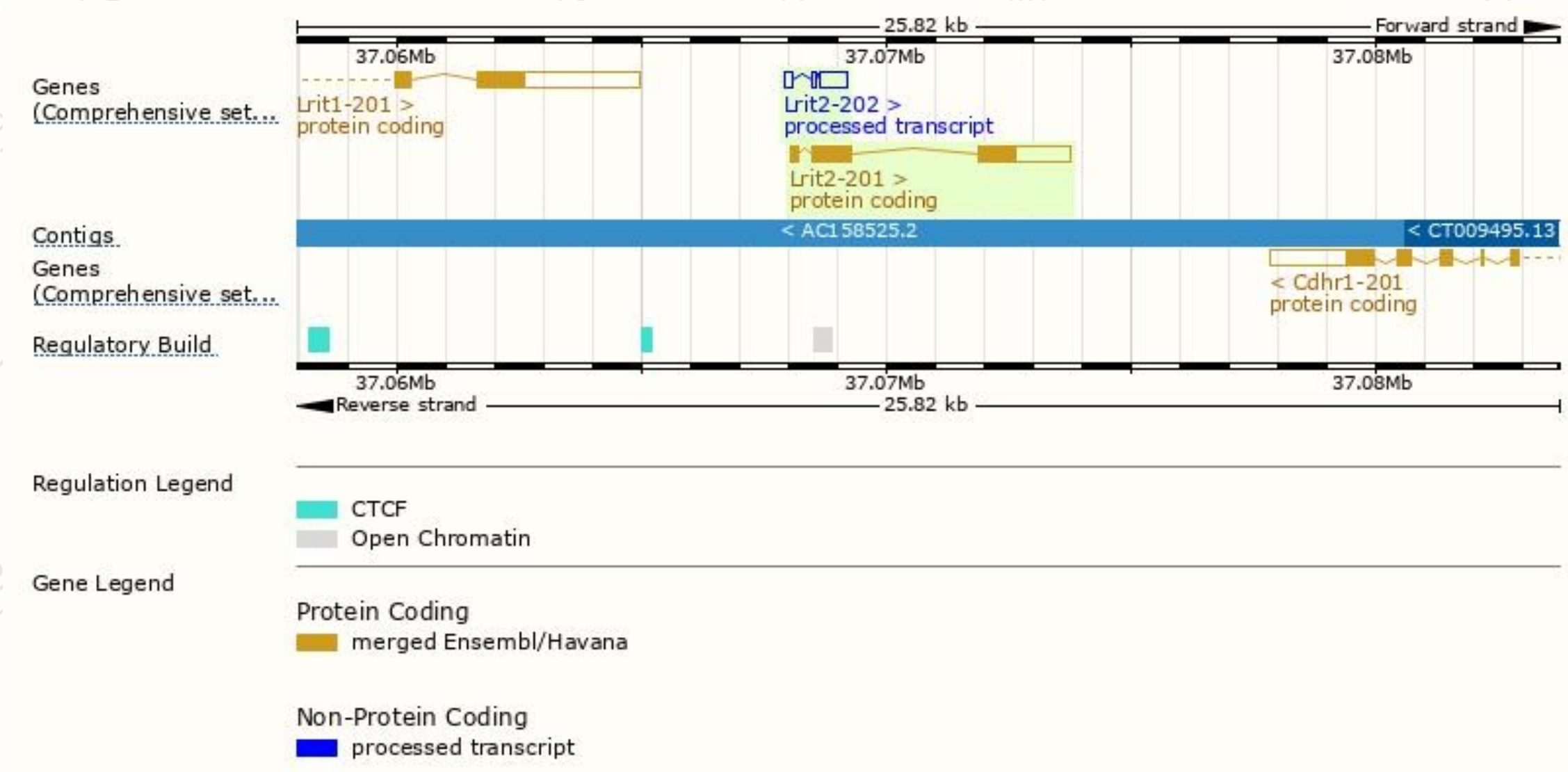
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lrit2-201	ENSMUST00000057176.4	2790	549aa	Protein coding	CCDS26951	Q6PFC5	TSL:1 GENCODE basic APPRIS P1
Lrit2-202	ENSMUST00000224104.1	750	No protein	Processed transcript	-	-	

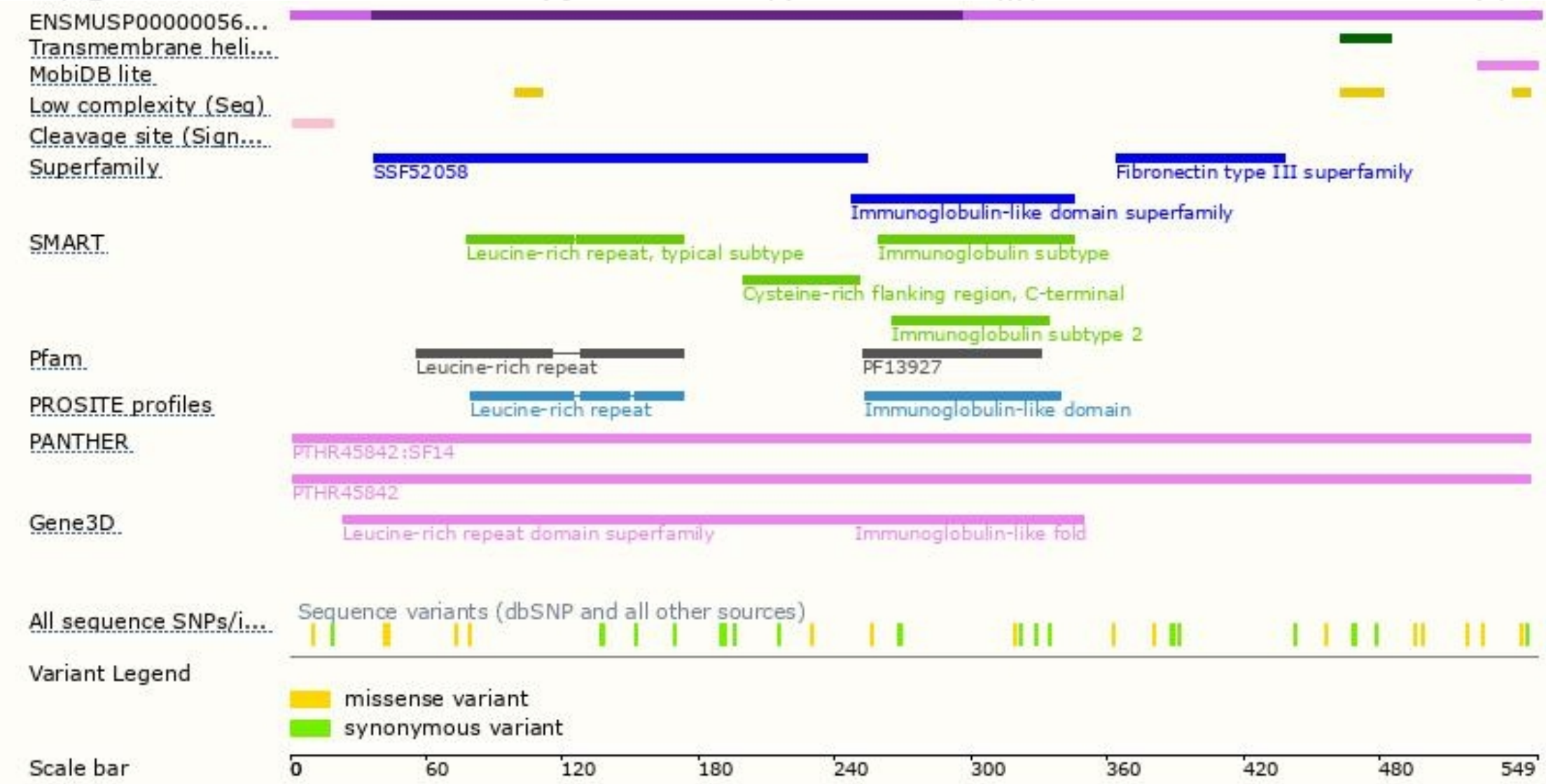
The strategy is based on the design of *Lrit2-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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