Lyzl6 Cas9-CKO Strategy

Designer: Xiaojing Li

Reviewer: JiaYu

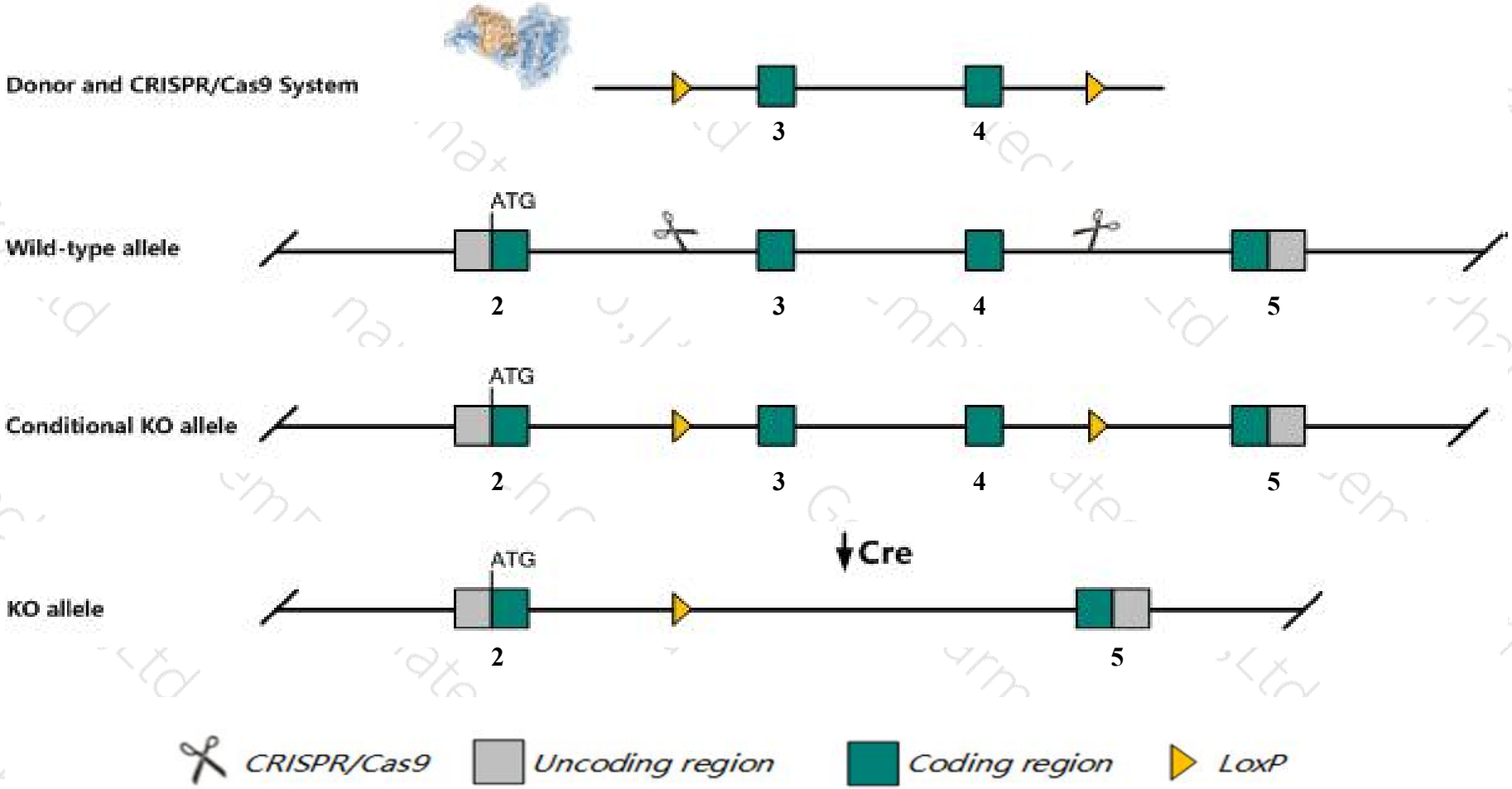
Design Date: 2020-7-21

Project Overview

Project Name	***Lyzl6***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lyzl6* gene. The schematic diagram is as follows:



Technical routes

➢ The *Lyzl6* gene has 3 transcripts. According to the structure of *Lyzl6* gene, exon3-exon4 of *Lyzl6-201*(ENSMUST00000021328.7) transcript is recommended as the knockout region.The region contains 238bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Lyzl6* 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

➢ According to the existing MGI data,male mice homozygous for a mutation are viable and show normal fertility.

➢ The *Lyzl6* gene is located on the Chr11. 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）

Lyzl6 lysozyme-like 6 [Mus musculus (house mouse)]

Gene ID: 69444, updated on 13-Mar-2020

Summary

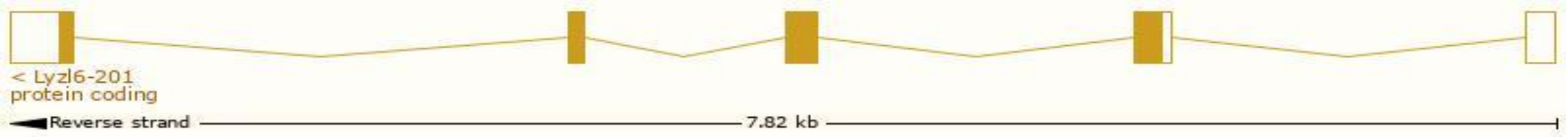
Official Symbol	Lyzl6 provided by MGI
Official Full Name	lysozyme-like 6 provided byMGI
Primary source	MGI:MGI:1916694
See related	Ensembl:ENSMUSG00000020945
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700023H08Rik, Lyc1, Lyzb
Expression	Restricted expression toward testis adult (RPKM 87.6)See more
Orthologs	human all

Transcript information（Ensembl）

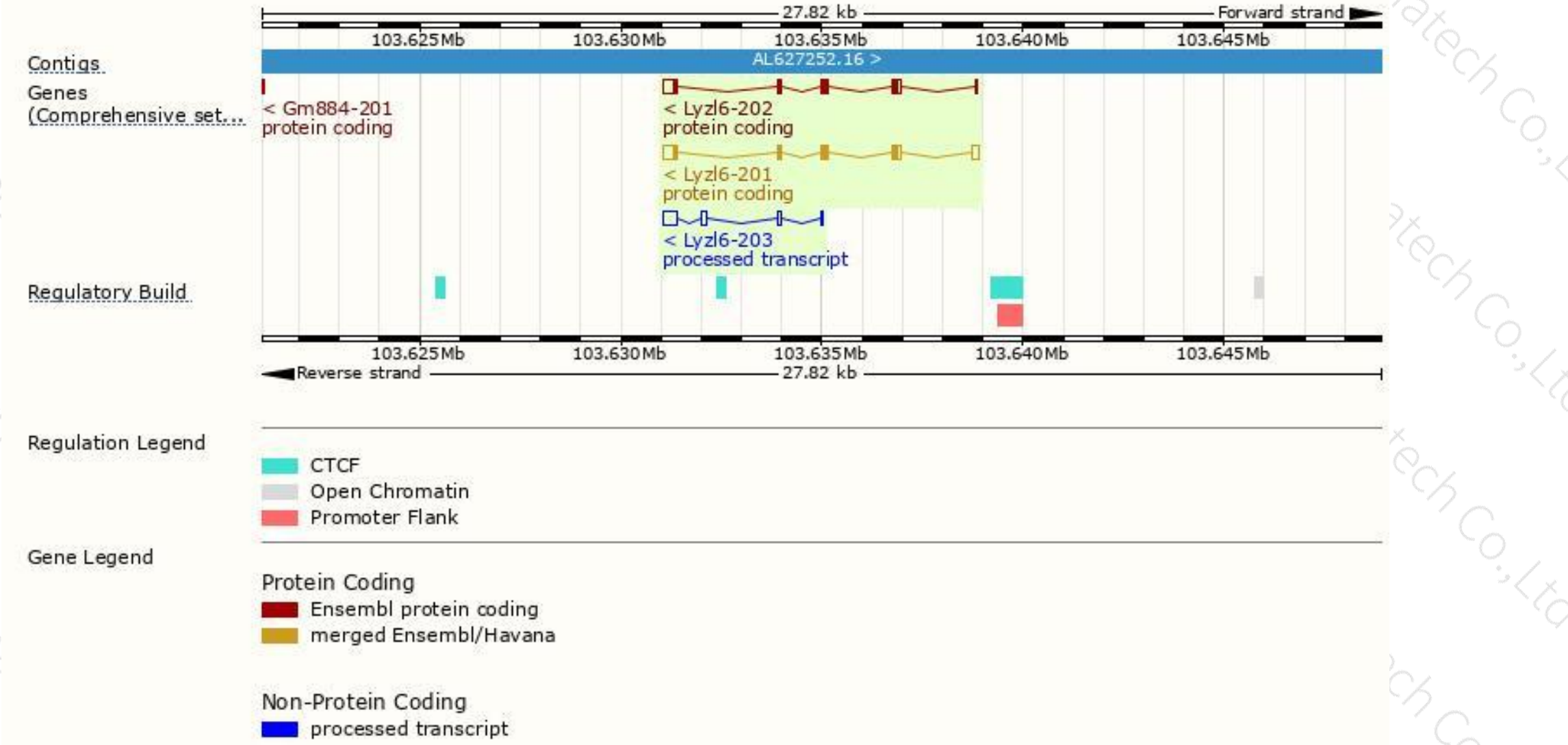
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lyzl6-201	ENSMUST00000021328.7	900	148aa	Protein coding	CCDS25519	A0A077S2U3 Q9DA11	TSL:1 GENCODE basic APPRIS P1
Lyzl6-202	ENSMUST00000107014.7	802	148aa	Protein coding	CCDS25519	A0A077S2U3 Q9DA11	TSL:1 GENCODE basic APPRIS P1
Lyzl6-203	ENSMUST00000140430.1	512	No protein	Processed transcript	-	-	TSL:5

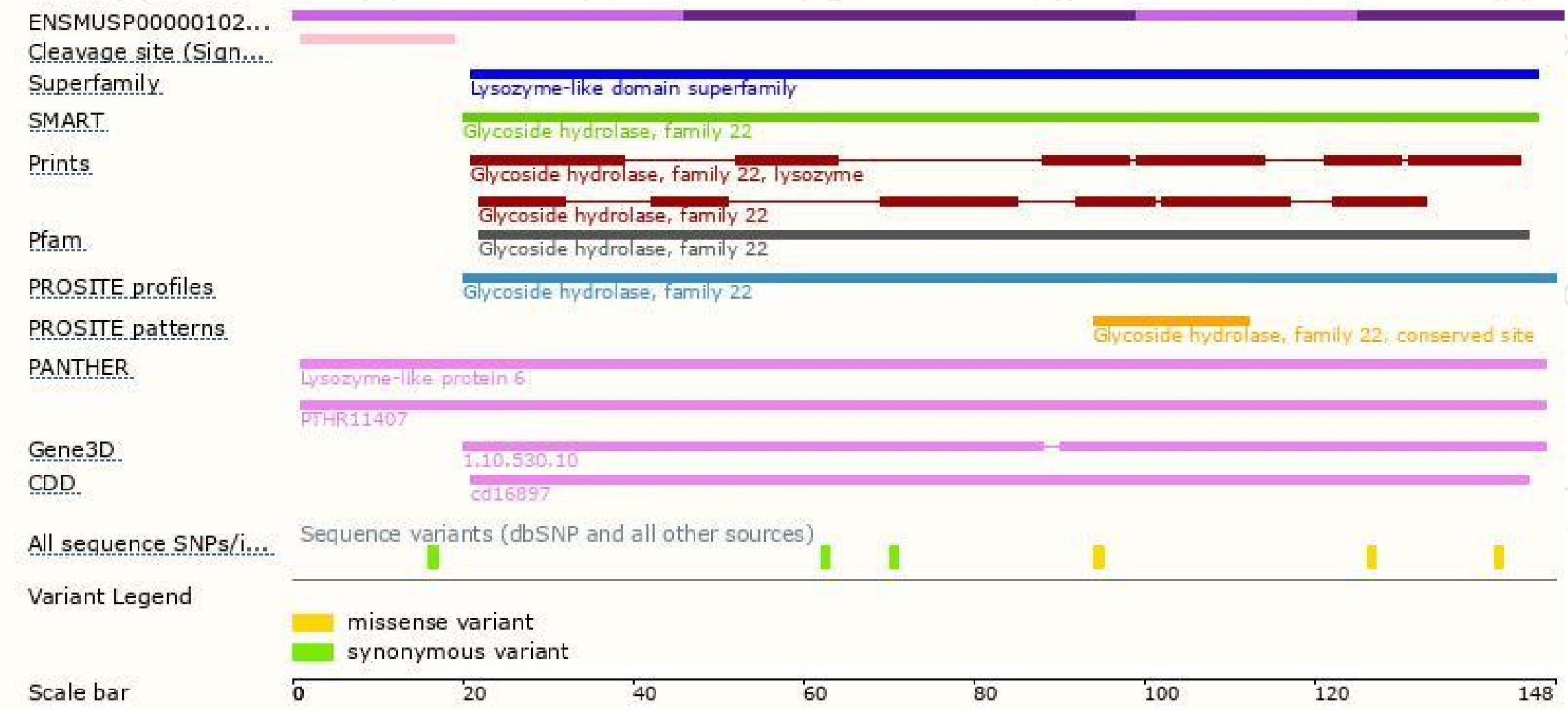
The strategy is based on the design of *Lyzl6-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd