Il17rd Cas9-CKO Strategy

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Project Overview

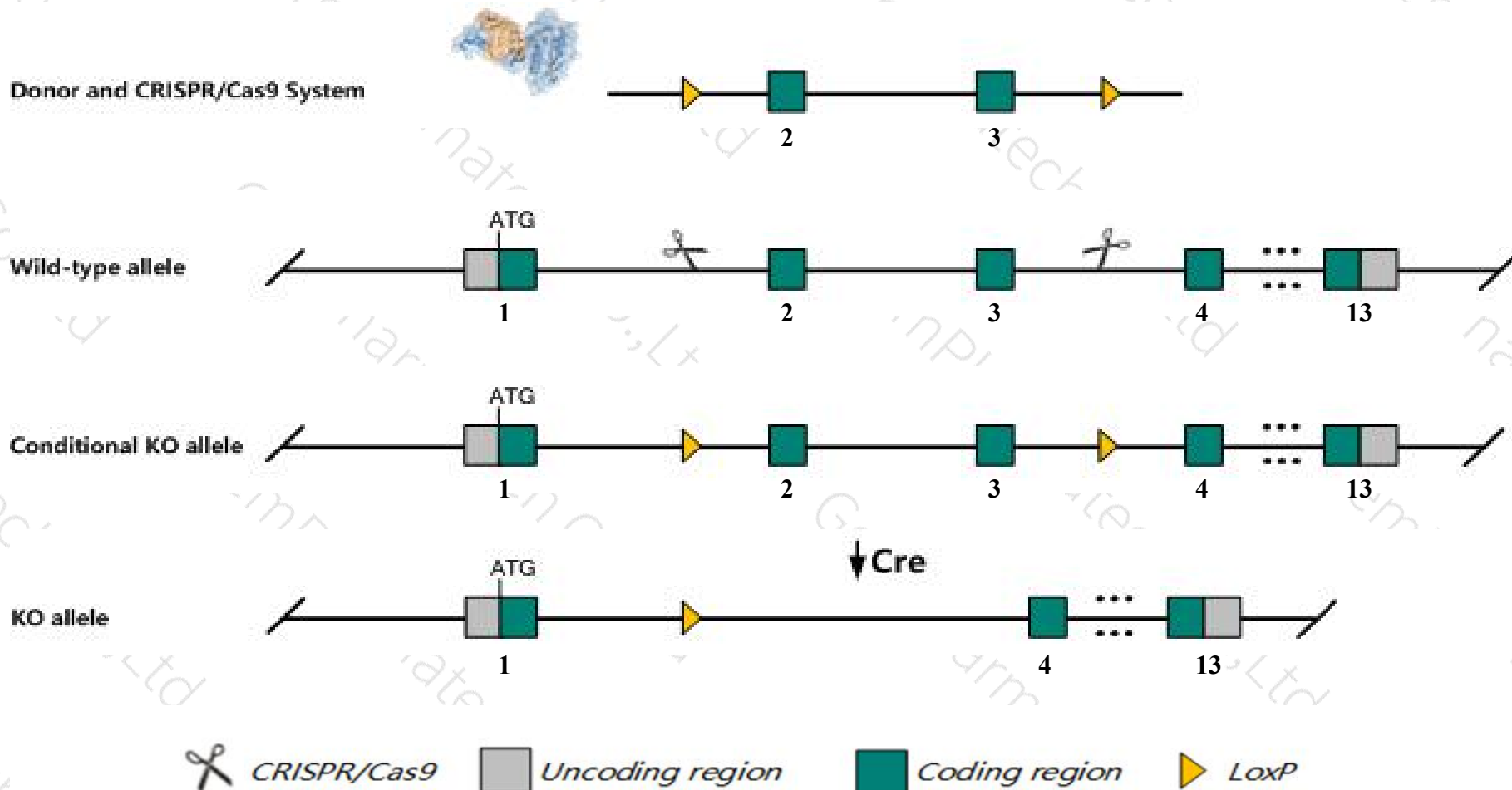|	
Project Name	*Il17rd*
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Il17rd* gene. The schematic diagram is as follows:

Donor and CRISPR/Cas9 System

Wild-type allele

Conditional KO allele

KO allele

CRISPR/Cas9   Uncoding region   Coding region   LoxP

Technical routes

➤ The *Il17rd* gene has 5 transcripts. According to the structure of *Il17rd* gene, exon2-exon3 of *Il17rd-201* (ENSMUST00000035336.4) transcript is recommended as the knockout region.The region contains Ens 184bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Il17rd* 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,Mice homozygous for a knock-out allele are viable and show no obvious phenotype. A subset of mice homozygous for a gene-trapped allele display cochlear nucleus defects and abnormal auditory brainstem responses.

➢ The *Il17rd* 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）

Il17rd interleukin 17 receptor D [Mus musculus (house mouse)]

Gene ID: 171463, updated on 31-Jan-2019

Summary

|	
Official Symbol	Il17rd provided by MGI
Official Full Name	interleukin 17 receptor D provided by MGI
Primary source	MGI:MGI:2159727
See related	Ensembl:ENSMUSG00000040717
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	2810004A10Rik, AI428510, Sef, Sef-S
Expression	Broad expression in limb E14.5 (RPKM 5.6), lung adult (RPKM 4.4) and 23 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 5 transcripts,all transcripts are shown below:

| Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Il17rd-201	ENSMUST00000035336.4	8280	738aa	Protein coding	CCDS26885	Q8JZL1	TSL:1 GENCODE basic APPRIS P1
Il17rd-203	ENSMUST00000225146.1	3366	594aa	Protein coding	-	Q8JZL1	GENCODE basic
Il17rd-205	ENSMUST00000226105.1	2923	562aa	Protein coding	-	Q3V0D5	GENCODE basic
Il17rd-202	ENSMUST0000223942.1	2186	167aa	Protein coding	-	A0A286YCS2	GENCODE basic
Il17rd-204	ENSMUST00000225829.1	2134	No protein	Processed transcript	-	-	

The strategy is based on the design of *Il17rd-201* transcript,The transcription is shown below
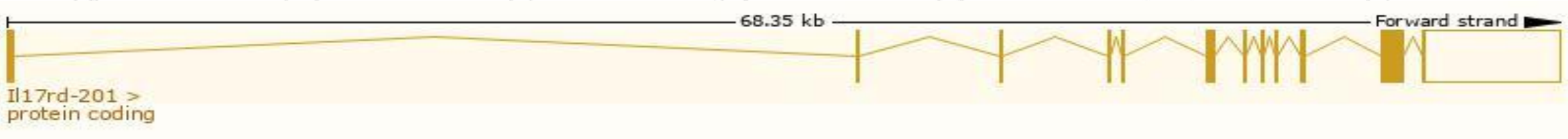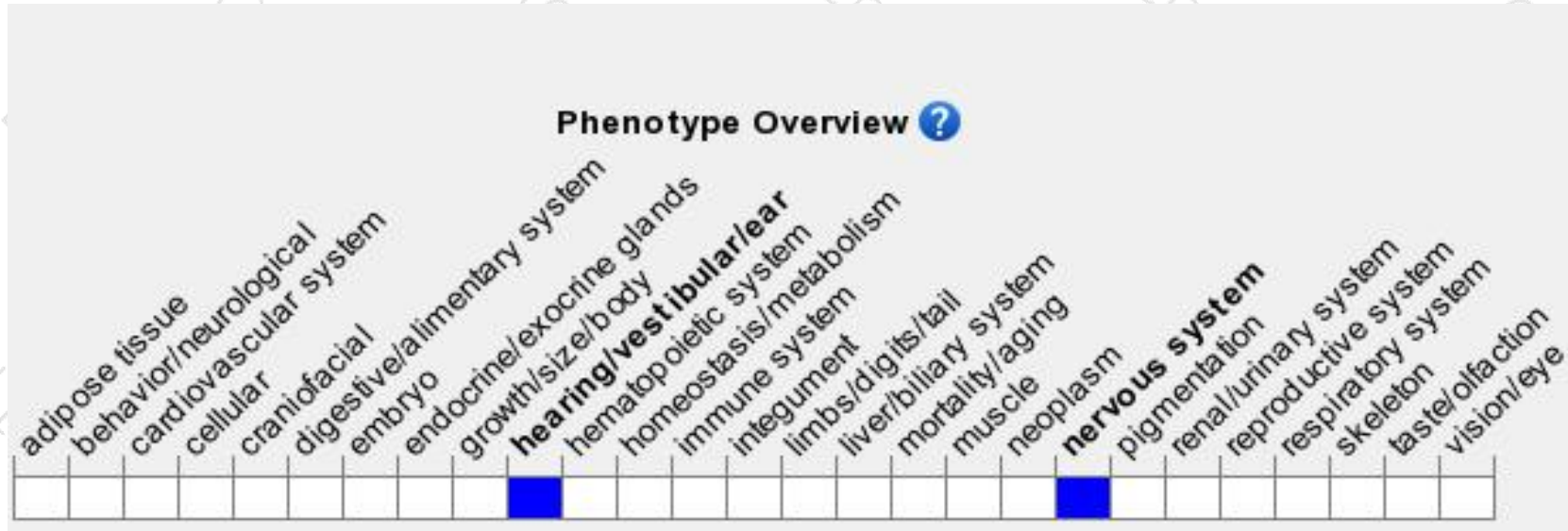
Genomic location distribution
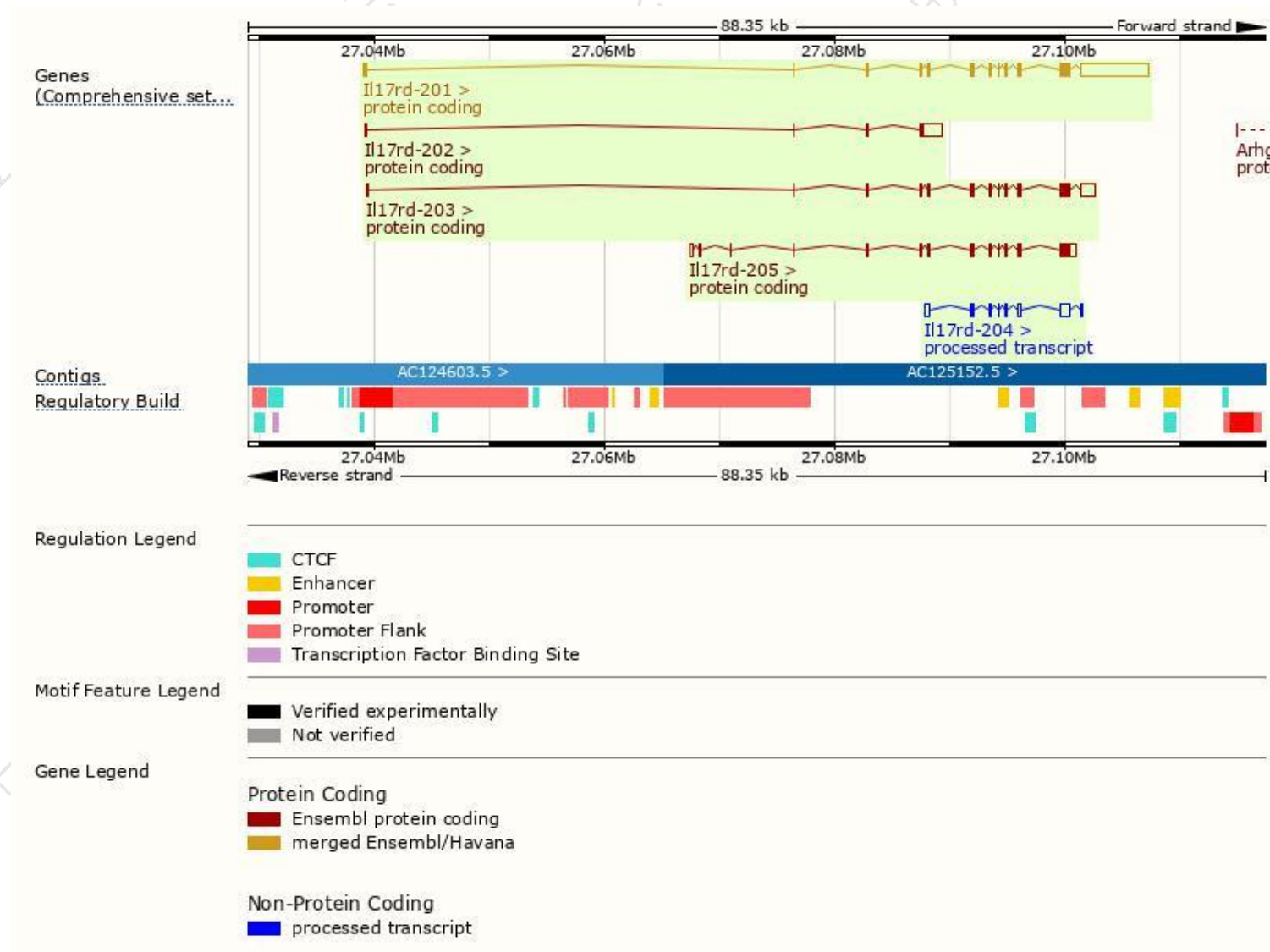
Protein domain
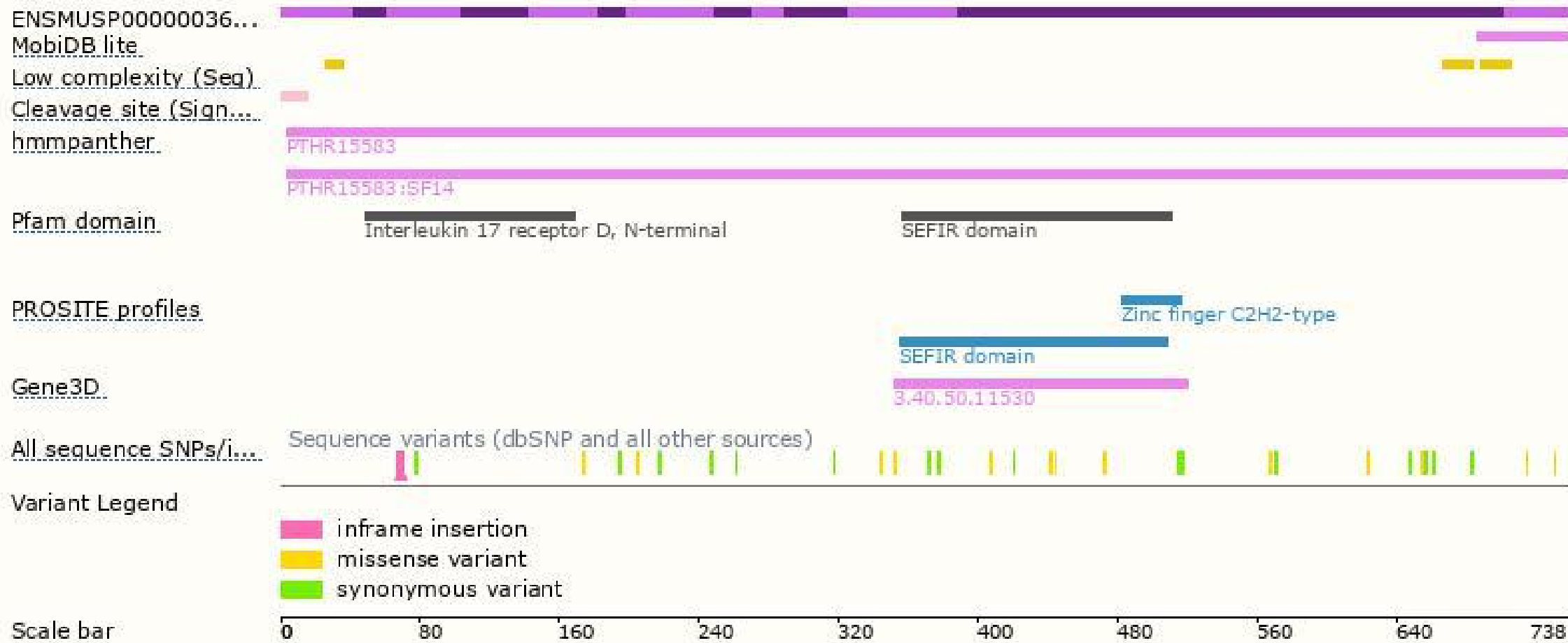
Mouse phenotype description(MGI)

Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(http://www.informatics.jax.org/).

According to the existing MGI data,Mice homozygous for a knock-out allele are viable and show no obvious phenotype. A subset of mice homozygous for a gene-trapped allele display cochlear nucleus defects and abnormal auditory brainstem responses.

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