Stab1 Cas9-KO Strategy

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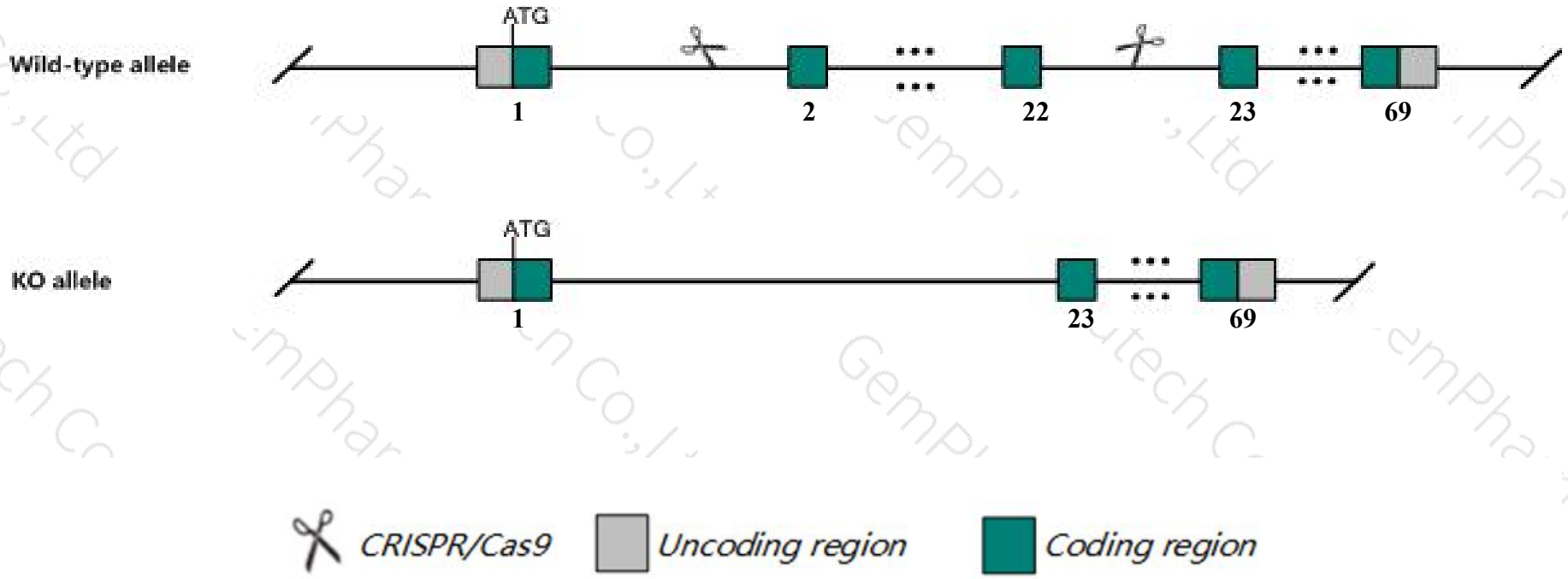
Design Date: 2020-1-16

Project Overview

Project Name	***Stab1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Stab1* gene. The schematic diagram is as follows:



Technical routes

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- The *Stab1* gene has 13 transcripts. According to the structure of *Stab1* gene, exon2-exon22 of *Stab1-201* (ENSMUST00000036618.13) transcript is recommended as the knockout region.The region contains 2269bp coding sequenc Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Stab1* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Mice homozygous for a knock-out allele exhibit no physical or behavioral abnormalities.

- The *Stab1* 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.

- Transcript 207 CDS 5' incomplete the influences is unknown; Transcript 203 CDS 5' and 3' incomplete the influences is unknown.

- This Strategy is designed based on genetic information in existing databases.Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information （NCBI）

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Stab1 stabilin 1 [Mus musculus (house mouse)]

Gene ID: 192187, updated on 19-Mar-2019

Summary

Official Symbol	Stab1 provided by MGI
Official Full Name	stabilin 1 provided by MGI
Primary source	MGI:MGI:2178742
See related	Ensembl:ENSMUSG00000042286
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	FEEL-1, FELE-1, MFEEL-1, MS-1, STAB-1, mKIAA0246
Expression	Ubiquitous expression in ovary adult (RPKM 36.3), subcutaneous fat pad adult (RPKM 27.9) and 27 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

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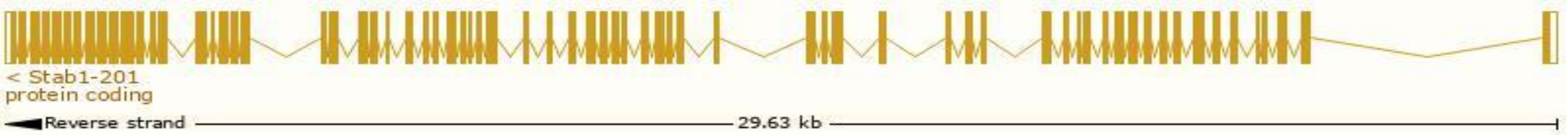
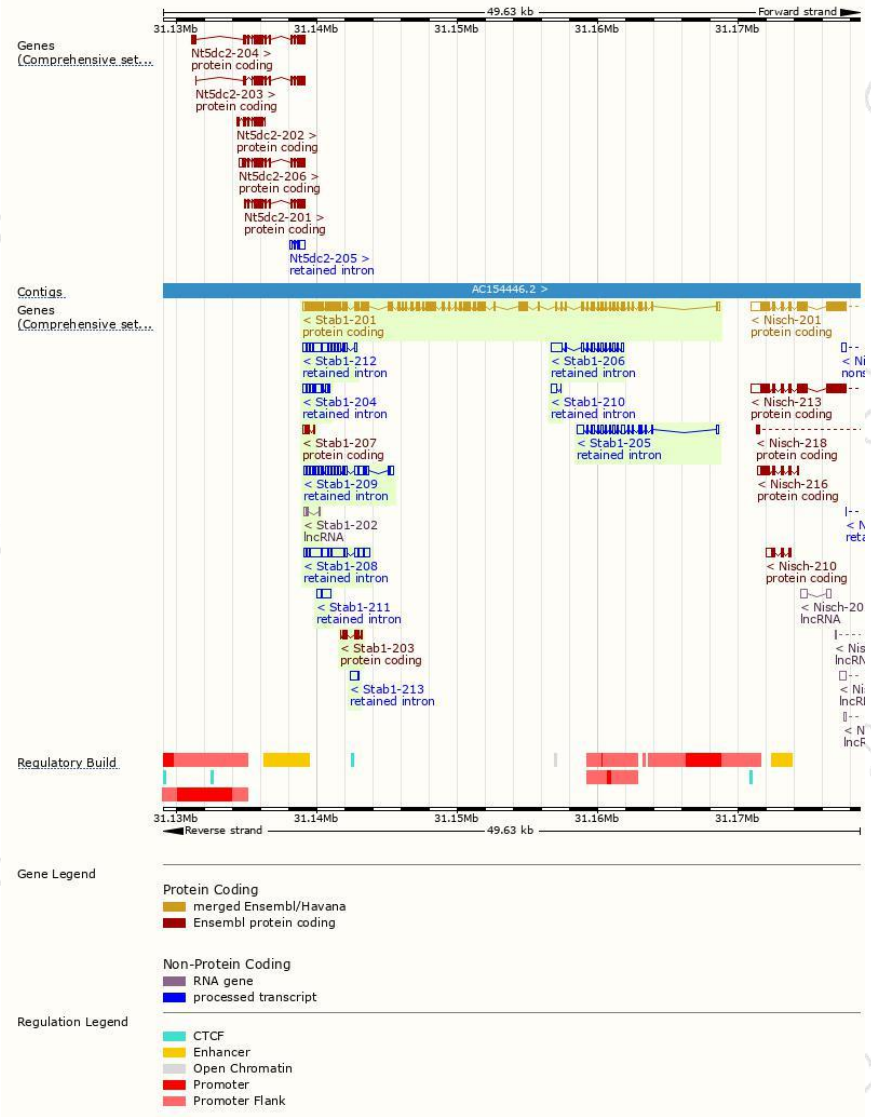
The gene has 13 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Stab1-201	ENSMUST00000036618.13	7999	2571aa	Protein coding	CCDS26906	G3X973	TSL:1 GENCODE basic APPRIS P1
Stab1-203	ENSMUST00000159249.1	591	197aa	Protein coding	-	F7BK35	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:5
Stab1-207	ENSMUST00000160024.7	413	92aa	Protein coding	-	F7CT68	CDS 5' incomplete TSL:3
Stab1-208	ENSMUST00000160720.1	3453	No protein	Retained intron	-	-	TSL:2
Stab1-209	ENSMUST00000161129.7	3001	No protein	Retained intron	-	-	TSL:1
Stab1-205	ENSMUST00000159532.1	2427	No protein	Retained intron	-	-	TSL:1
Stab1-212	ENSMUST00000162169.7	2344	No protein	Retained intron	-	-	TSL:2
Stab1-206	ENSMUST00000159757.7	2116	No protein	Retained intron	-	-	TSL:1
Stab1-204	ENSMUST00000159480.7	1236	No protein	Retained intron	-	-	TSL:2
Stab1-211	ENSMUST00000161631.1	887	No protein	Retained intron	-	-	TSL:3
Stab1-213	ENSMUST00000162763.1	524	No protein	Retained intron	-	-	TSL:3
Stab1-210	ENSMUST00000161464.1	444	No protein	Retained intron	-	-	TSL:3
Stab1-202	ENSMUST00000159208.7	242	No protein	lncRNA	-	-	TSL:5

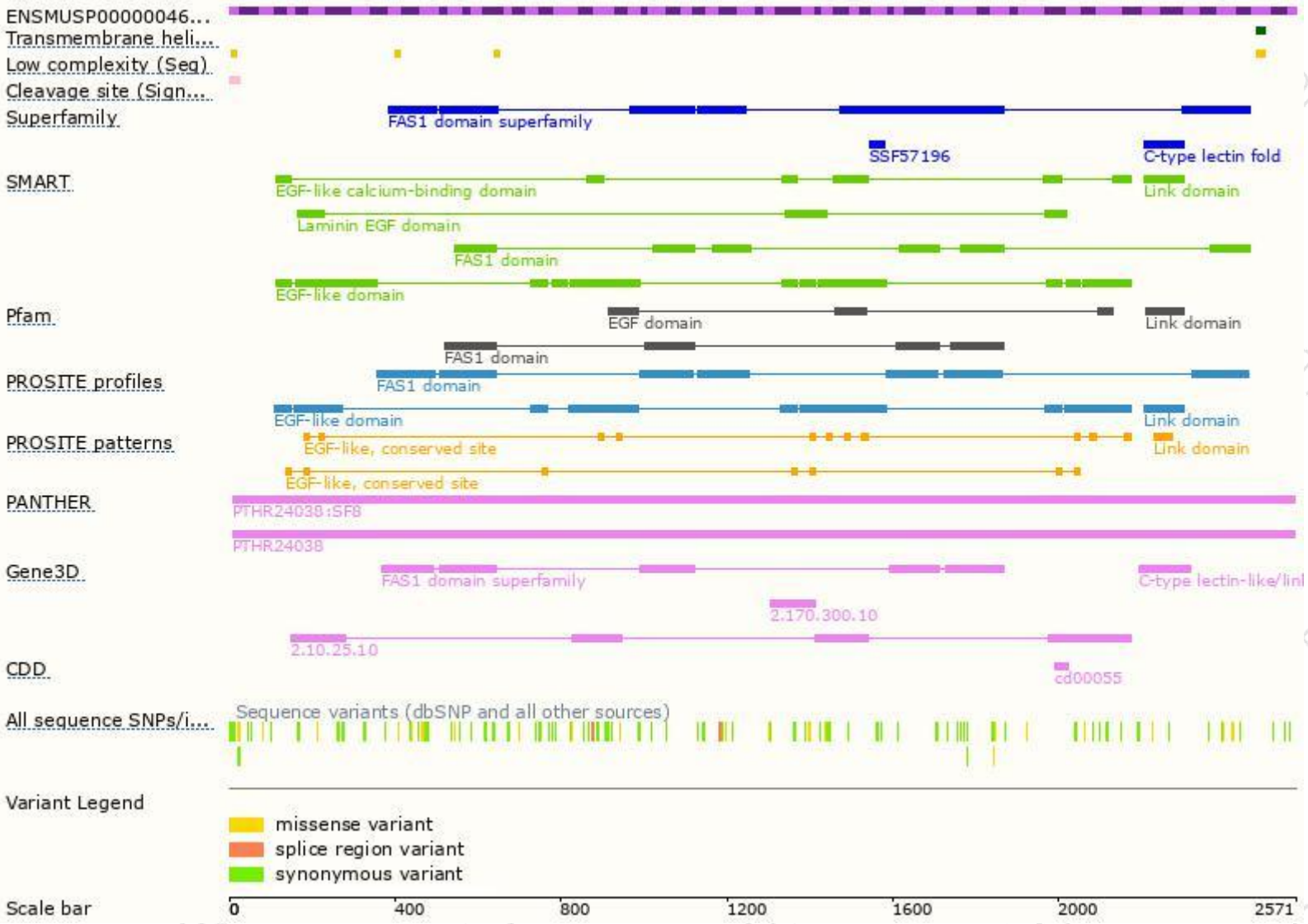
The strategy is based on the design of *Stab1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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