Asap2 Cas9-KO Strategy

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Project Overview

Project Name	***Asap2***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Asap2* gene. The schematic diagram is as follows:

Technical routes

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- The *Asap2* gene has 5 transcripts. According to the structure of *Asap2* gene, exon2 of *Asap2-202* (ENSMUST00000064595.14) transcript is recommended as the knockout region.The region contains 73bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Asap2* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- The *Asap2* gene is located on the Chr12. 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 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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Asap2 ArfGAP with SH3 domain, ankyrin repeat and PH domain 2 [*Mus musculus* (house mouse)]

Gene ID: 211914, updated on 12-Aug-2019

Summary

Official Symbol	Asap2 provided by MGI
Official Full Name	ArfGAP with SH3 domain, ankyrin repeat and PH domain 2 provided by MGI
Primary source	MGI:MGI:2685438
See related	Ensembl:ENSMUSG00000052632
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	PAP; PAG3; Ddef2; Gm592; Gm1523; 6530401G17Rik
Expression	Ubiquitous expression in CNS E14 (RPKM 10.8), bladder adult (RPKM 10.1) and 27 other tissues See more

Genomic context

Location: 12; 12 A1.2-A1.3

See Asap2 in Genome Data Viewer

Exon count: 30

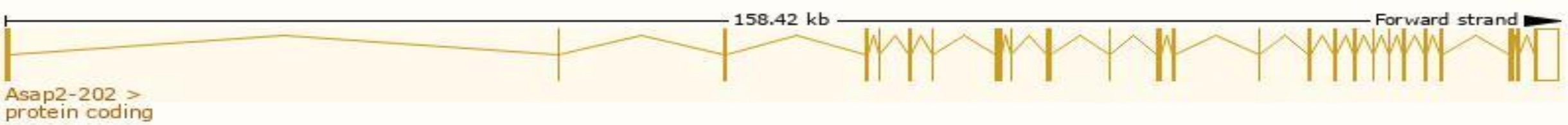
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	12	NC_000078.6 (21111368..21270171)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	12	NC_000078.5 (21117617..21276032)

Transcript information（Ensembl）

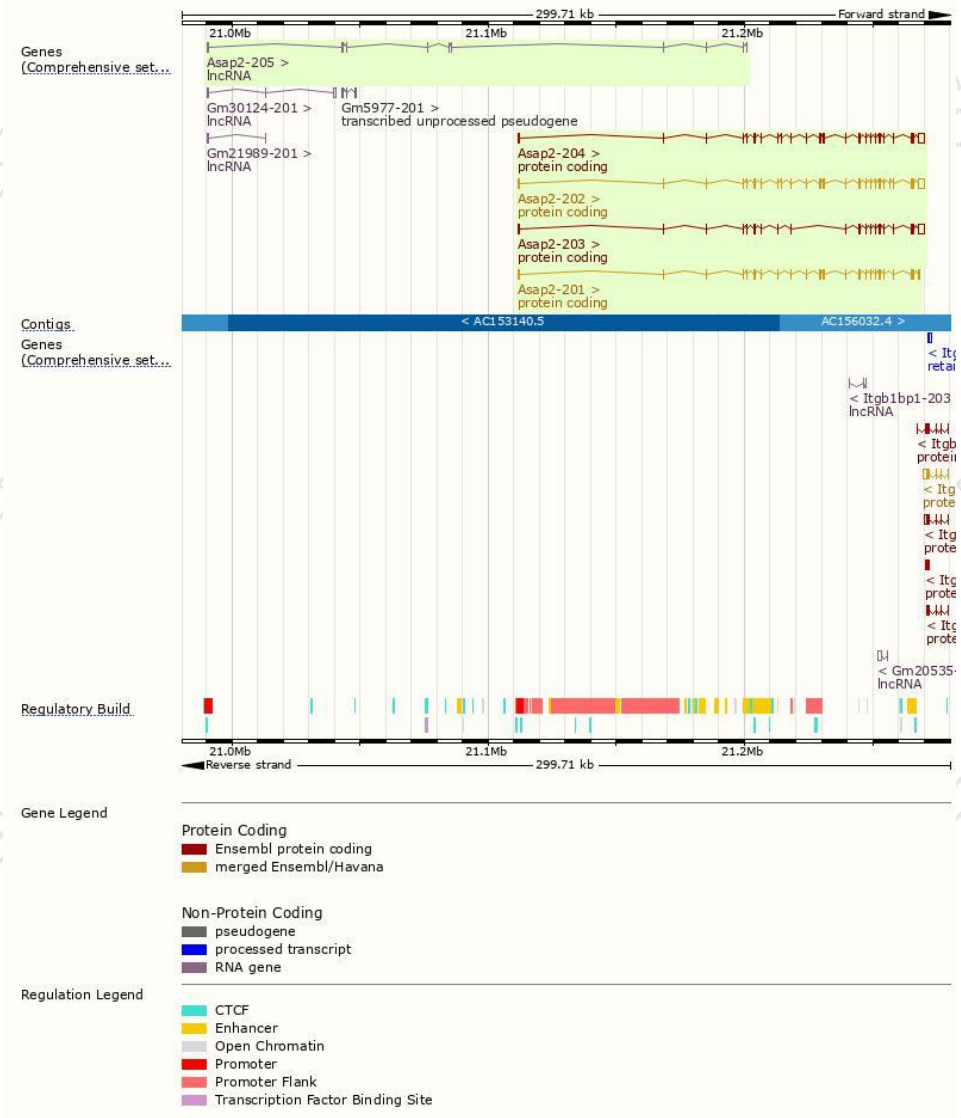
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Asap2-202	ENSMUST00000064595.14	5678	1000aa	Protein coding	CCDS49037	E9PX52	TSL:5 GENCODE basic APPRIS P4
Asap2-204	ENSMUST00000101562.10	5552	958aa	Protein coding	CCDS56832	Q7SIG6	TSL:1 GENCODE basic APPRIS ALT2
Asap2-201	ENSMUST00000050990.9	3345	955aa	Protein coding	CCDS49036	D3YX85	TSL:5 GENCODE basic APPRIS ALT2
Asap2-203	ENSMUST00000090834.12	5097	809aa	Protein coding	-	Q7SIG6	TSL:5 GENCODE basic
Asap2-205	ENSMUST00000174530.1	1609	No protein	lncRNA	-	-	TSL:1

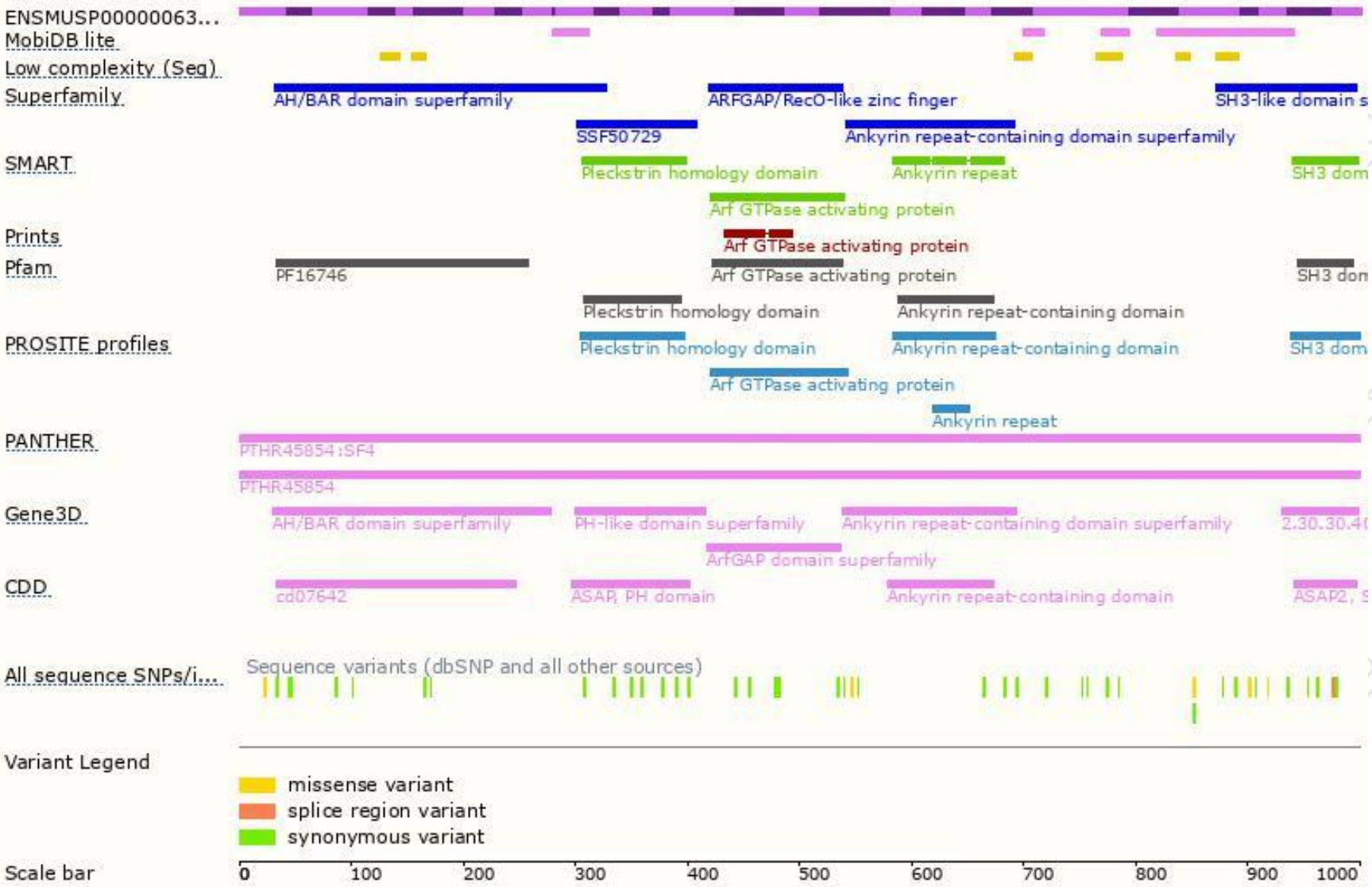
The strategy is based on the design of *Asap2-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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