

Asap2 Cas9-CKO Strategy

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Project Overview

Project Name

Asap2

Project type

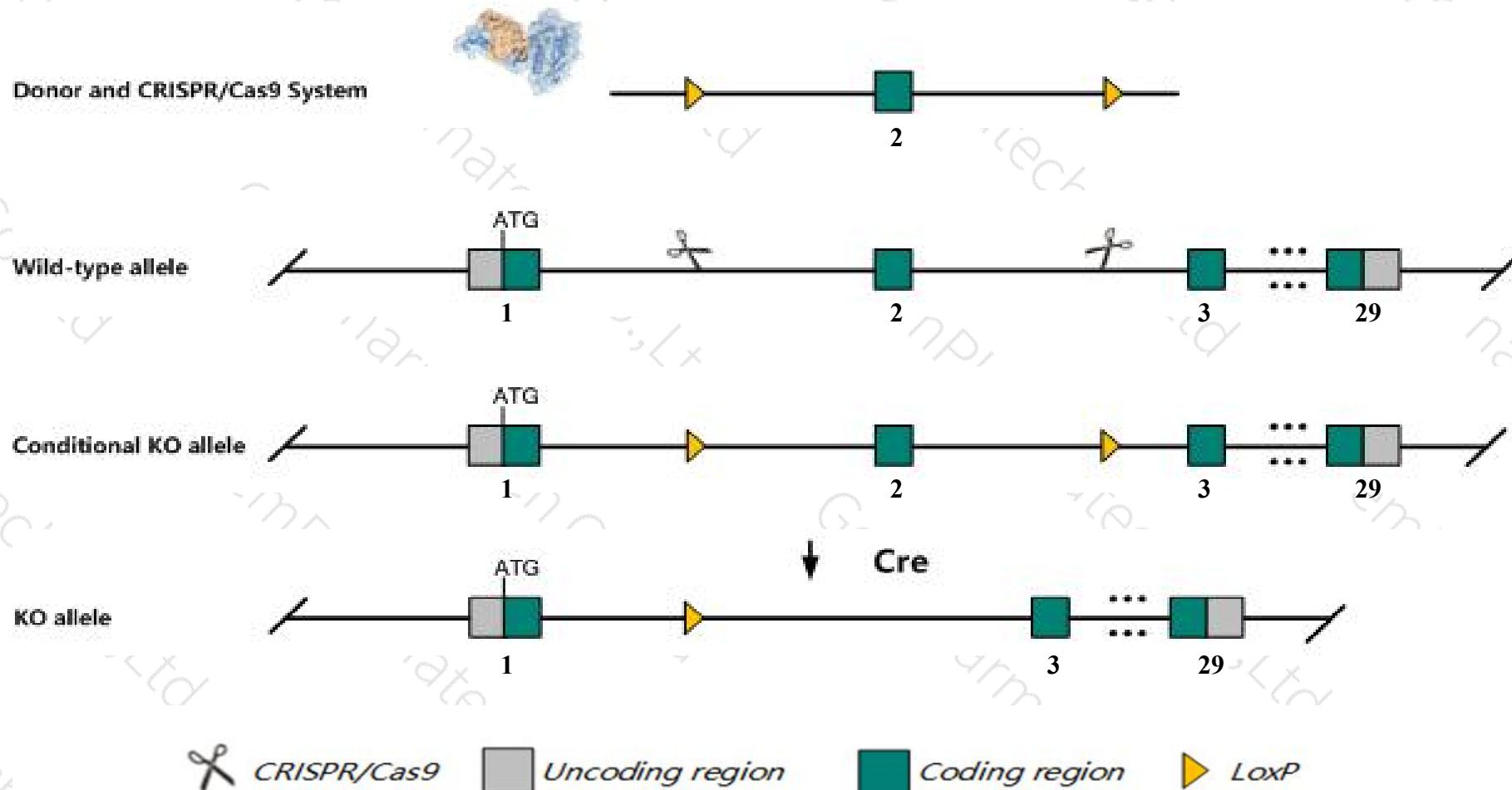
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- 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 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

- 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

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:ENSMUSG000000052632](#)
- 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

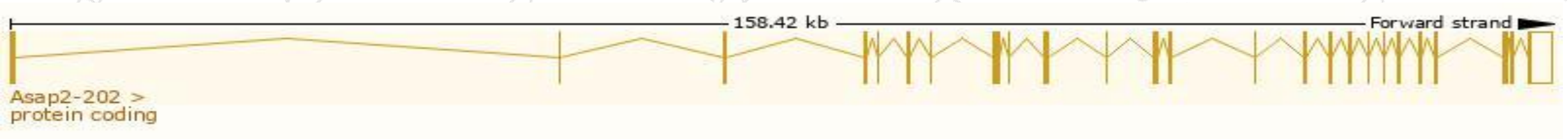
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	12	NC_000078.6 (21111368..21270171)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	12	NC_000078.5 (21117617..21276032)

Transcript information (Ensembl)

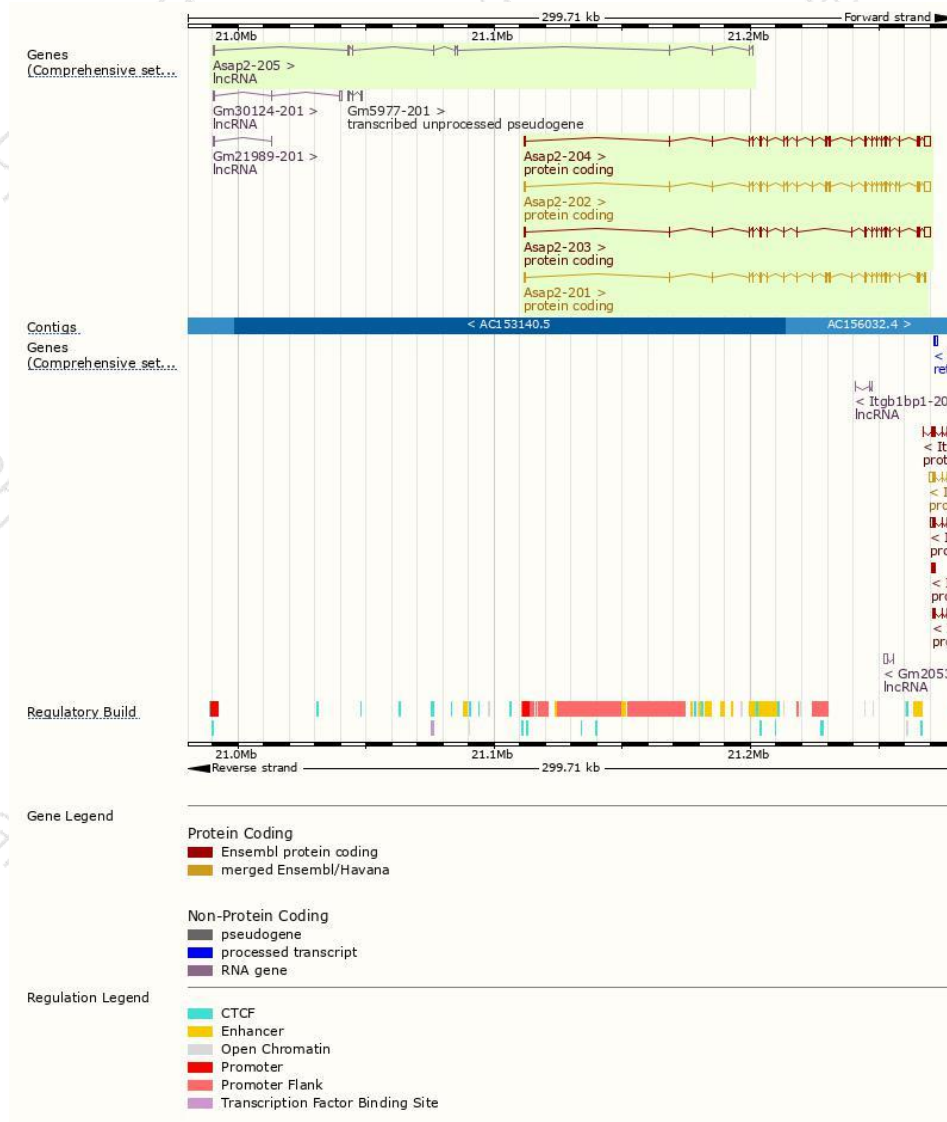
The gene has 5 transcripts,all transcripts are shown below:

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 ALT 2
Asap2-201	ENSMUST00000050990.9	3345	955aa	Protein coding	CCDS49036	D3YX85	TSL:5 GENCODE basic APPRIS ALT 2
Asap2-203	ENSMUST00000090834.12	5097	809aa	Protein coding	-	Q7SIG6	TSL:5 GENCODE basic
Asap2-205	ENSMUST00000174530.1	1609	No protein	lncRNA	-	-	TSL:1

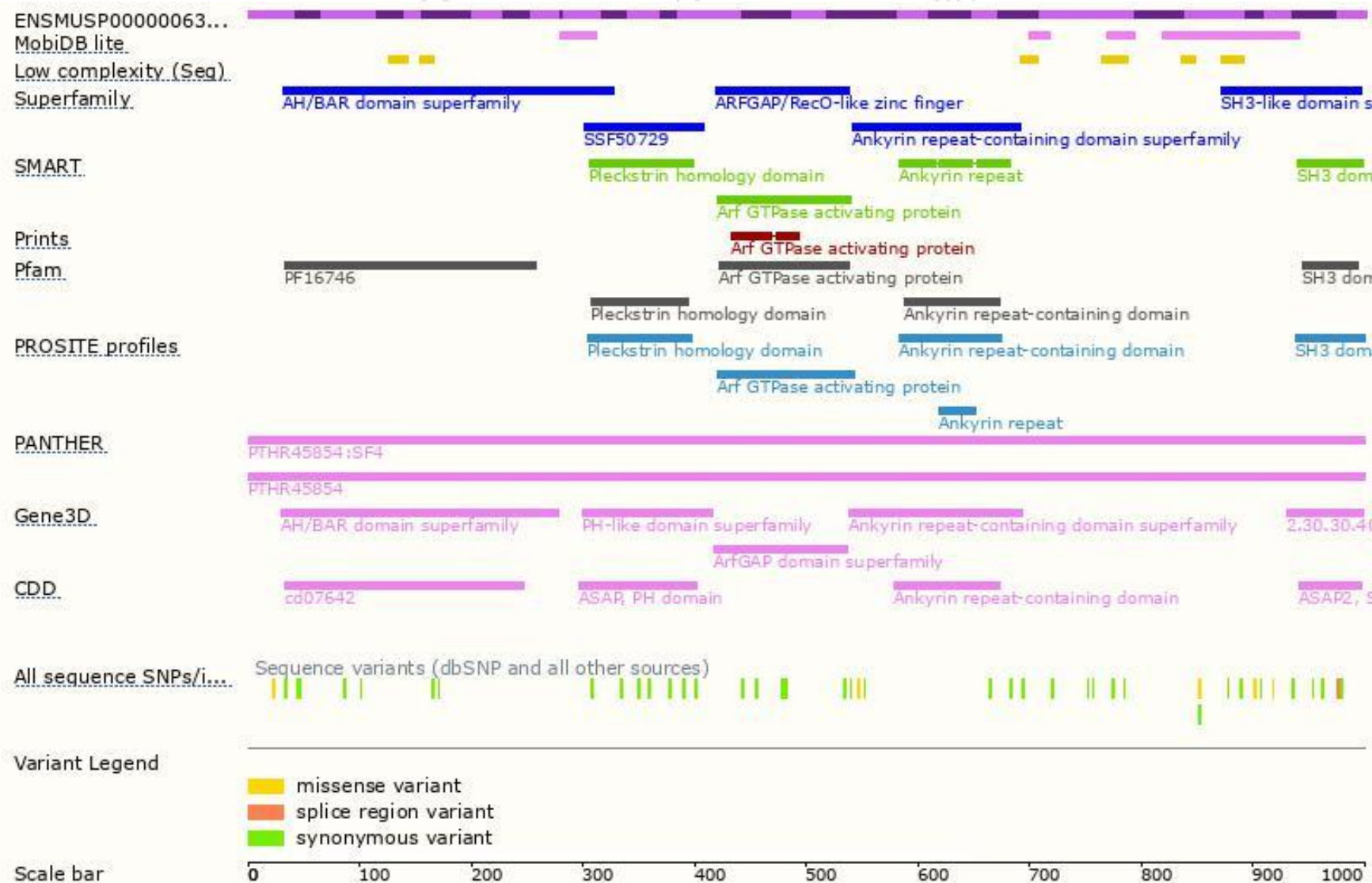
The strategy is based on the design of *Asap2-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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