

Elf2 Cas9-CKO Strategy

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Project Overview

Project Name

Elf2

Project type

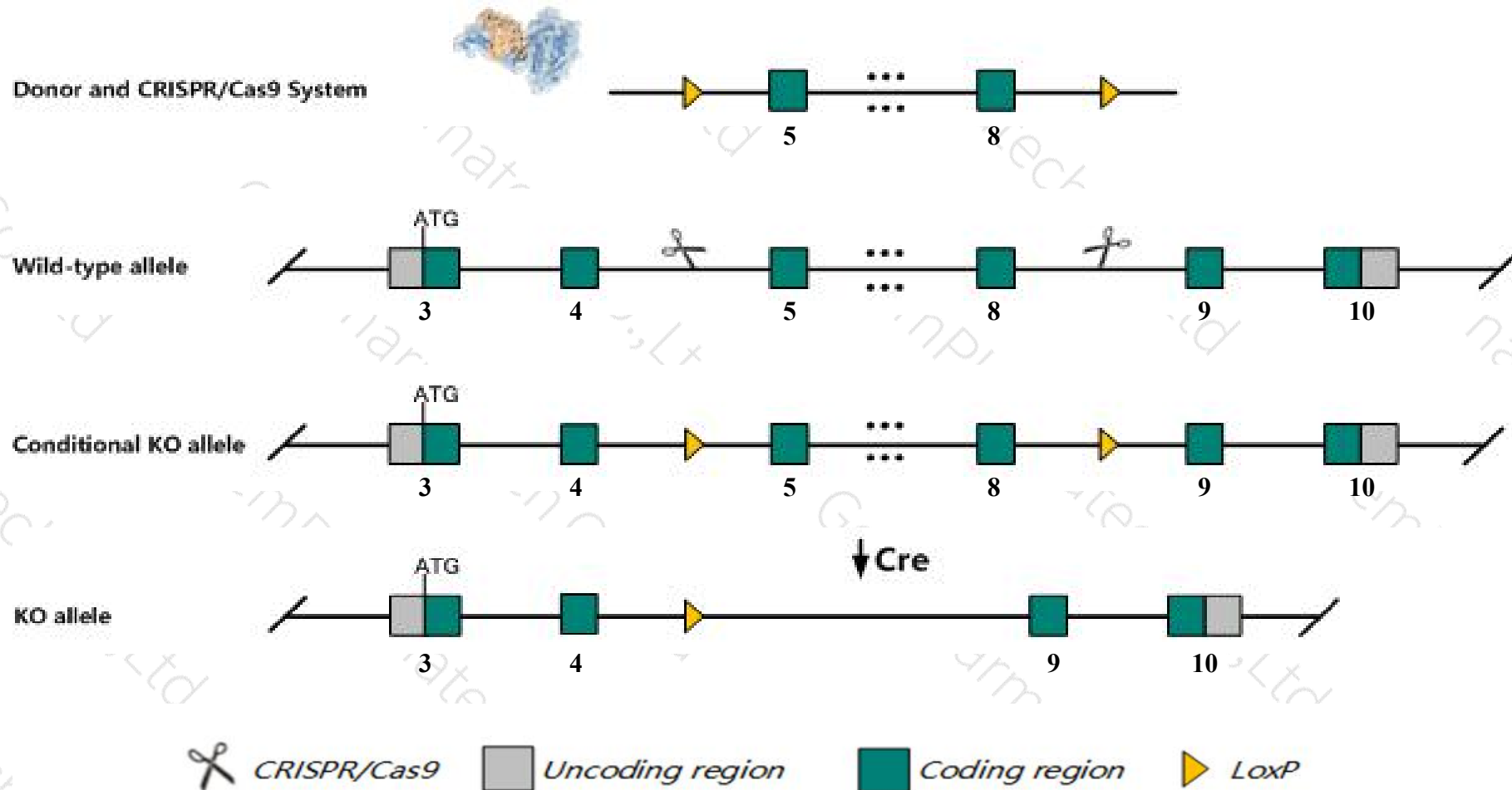
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Elf2* gene. The schematic diagram is as follows:



- The *Elf2* gene has 13 transcripts. According to the structure of *Elf2* gene, exon5-exon8 of *Elf2*-212 (ENSMUST00000194641.5) transcript is recommended as the knockout region. The region contains 568bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Elf2* 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 N-terminal of *Elf2* gene will remain several amino acids ,it may remain the partial function of *Elf2* gene.
- The *Elf2* gene is located on the Chr3. 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)

Elf2 E74-like factor 2 [*Mus musculus* (house mouse)]

Gene ID: 69257, updated on 12-Aug-2019

Summary

Official Symbol	Elf2 provided by MGI
Official Full Name	E74-like factor 2 provided by MGI
Primary source	MGI:MGI:1916507
See related	Ensembl:ENSMUSG00000037174
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	EU32; NERF; NERF-2; NERF-1A; NERF-1B; AW111824; BB183398; 2610036A20Rik; A230104O07Rik
Expression	Ubiquitous expression in testis adult (RPKM 16.4), thymus adult (RPKM 9.2) and 28 other tissues See more
Orthologs	human all

Genomic context

Location: 3; 3 C

See Elf2 in [Genome Data Viewer](#)

Exon count: 15

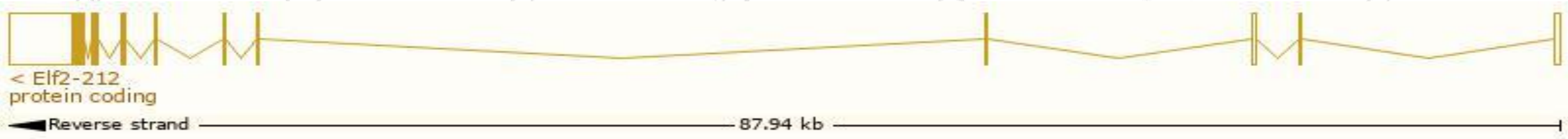
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	3	NC_000069.6 (51252720..51340683, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	3	NC_000069.5 (51059587..51129909, complement)

Transcript information (Ensembl)

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Elf2-212	ENSMUST00000194641.5	5919	593aa	Protein coding	CCDS17337	Q9JHC9	TSL:5 GENCODE basic APPRIS P3
Elf2-201	ENSMUST00000062009.13	3353	581aa	Protein coding	CCDS71242	Q3TVH6 Q9JHC9	TSL:1 GENCODE basic APPRIS ALT2
Elf2-206	ENSMUST00000163748.7	2656	593aa	Protein coding	CCDS17337	Q9JHC9	TSL:1 GENCODE basic APPRIS P3
Elf2-204	ENSMUST00000108053.8	2611	533aa	Protein coding	CCDS71241	Q9JHC9	TSL:1 GENCODE basic
Elf2-203	ENSMUST00000108051.7	2514	521aa	Protein coding	CCDS71240	Q9JHC9	TSL:1 GENCODE basic
Elf2-202	ENSMUST00000091144.10	2366	504aa	Protein coding	-	A0A0B4J1G5	TSL:5 GENCODE basic
Elf2-213	ENSMUST00000195432.1	2161	59aa	Protein coding	-	A0A0A6YY68	TSL:1 GENCODE basic
Elf2-205	ENSMUST00000156983.2	378	65aa	Protein coding	-	A0A0A6YWF3	CDS 3' incomplete TSL:5
Elf2-208	ENSMUST00000183463.7	3249	87aa	Nonsense mediated decay	-	Q80UM8	TSL:5
Elf2-207	ENSMUST00000183338.6	1083	81aa	Nonsense mediated decay	-	V9GXW8	TSL:5
Elf2-209	ENSMUST00000184677.6	688	113aa	Nonsense mediated decay	-	V9G XK9	TSL:3
Elf2-210	ENSMUST00000193909.1	1557	No protein	Retained intron	-	-	TSL:NA
Elf2-211	ENSMUST00000194209.1	549	No protein	lncRNA	-	-	TSL:1

The strategy is based on the design of *Elf2-212* 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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