

Erlin1 Cas9-CKO Strategy

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Project Overview

Project Name

Erlin1

Project type

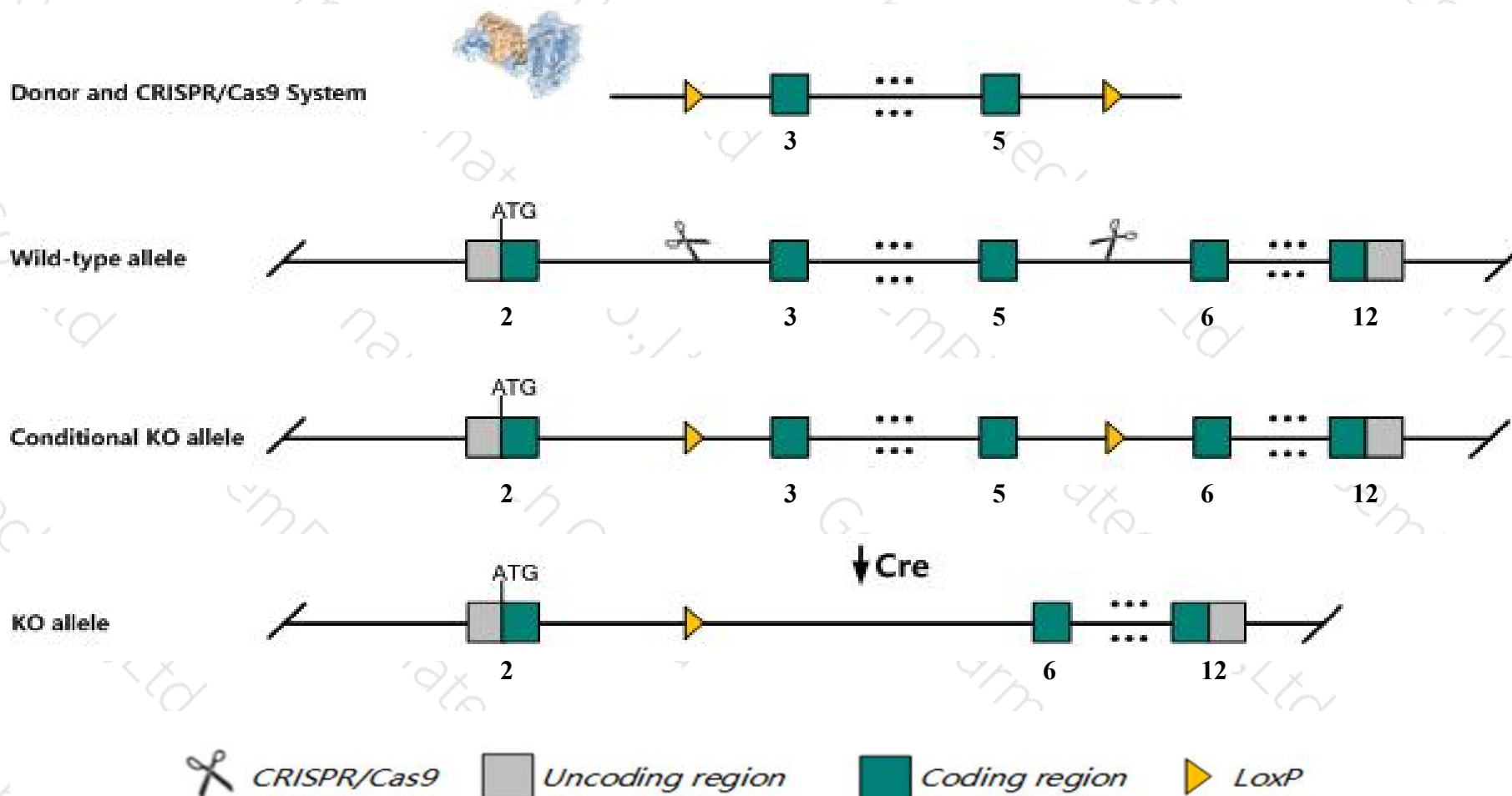
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Erlin1* gene. The schematic diagram is as follows:



Technical routes

- The *Erlin1* gene has 9 transcripts. According to the structure of *Erlin1* gene, exon3-exon5 of *Erlin1*-201 (ENSMUST00000071698.12) transcript is recommended as the knockout region. The region contains 191bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Erlin1* 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 *Erlin1* gene is located on the Chr19. 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 *Erlin1-204* may not be affected.
- 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)

Erlin1 ER lipid raft associated 1 [Mus musculus (house mouse)]

Gene ID: 226144, updated on 13-Mar-2020

Summary



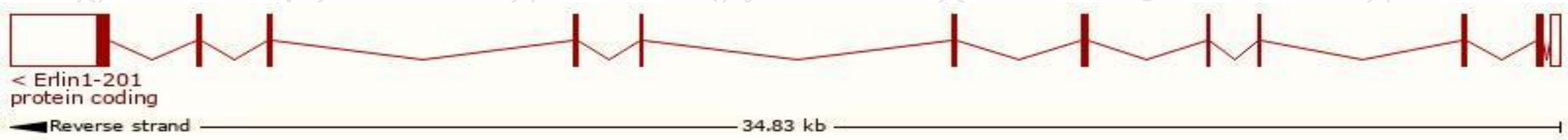
Official Symbol	Erlin1 provided by MGI
Official Full Name	ER lipid raft associated 1 provided by MGI
Primary source	MGI:MGI:2387613
See related	Ensembl:ENSMUSG000000025198
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2810439N09Rik, C80197, Keo4, Spfh1
Expression	Ubiquitous expression in placenta adult (RPKM 17.3), limb E14.5 (RPKM 8.7) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

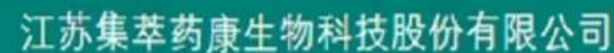
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Erlin1-205	ENSMUST00000170577.1	2083	No protein	Retained intron	-	-	TSL:1
Erlin1-203	ENSMUST00000168602.1	441	No protein	Retained intron	-	-	TSL:2
Erlin1-201	ENSMUST00000071698.12	3228	348aa	Protein coding	CCDS29842	Q91X78	TSL:5 Gencode basic APPRIS P1
Erlin1-206	ENSMUST00000170801.7	3172	348aa	Protein coding	CCDS29842	Q91X78	TSL:1 Gencode basic APPRIS P1
Erlin1-202	ENSMUST00000112028.9	3136	348aa	Protein coding	CCDS29842	Q91X78	TSL:1 Gencode basic APPRIS P1
Erlin1-208	ENSMUST00000172041.7	654	158aa	Protein coding	-	E9PUH5	CDS 3' incomplete TSL:3
Erlin1-209	ENSMUST00000172262.1	178	59aa	Protein coding	-	F6Z6D6	CDS 5' and 3' incomplete TSL:5
Erlin1-204	ENSMUST00000169092.1	172	23aa	Protein coding	-	E9PVM2	CDS 3' incomplete TSL:3
Erlin1-207	ENSMUST00000171952.1	332	69aa	Nonsense mediated decay	-	E9PZB0	TSL:5

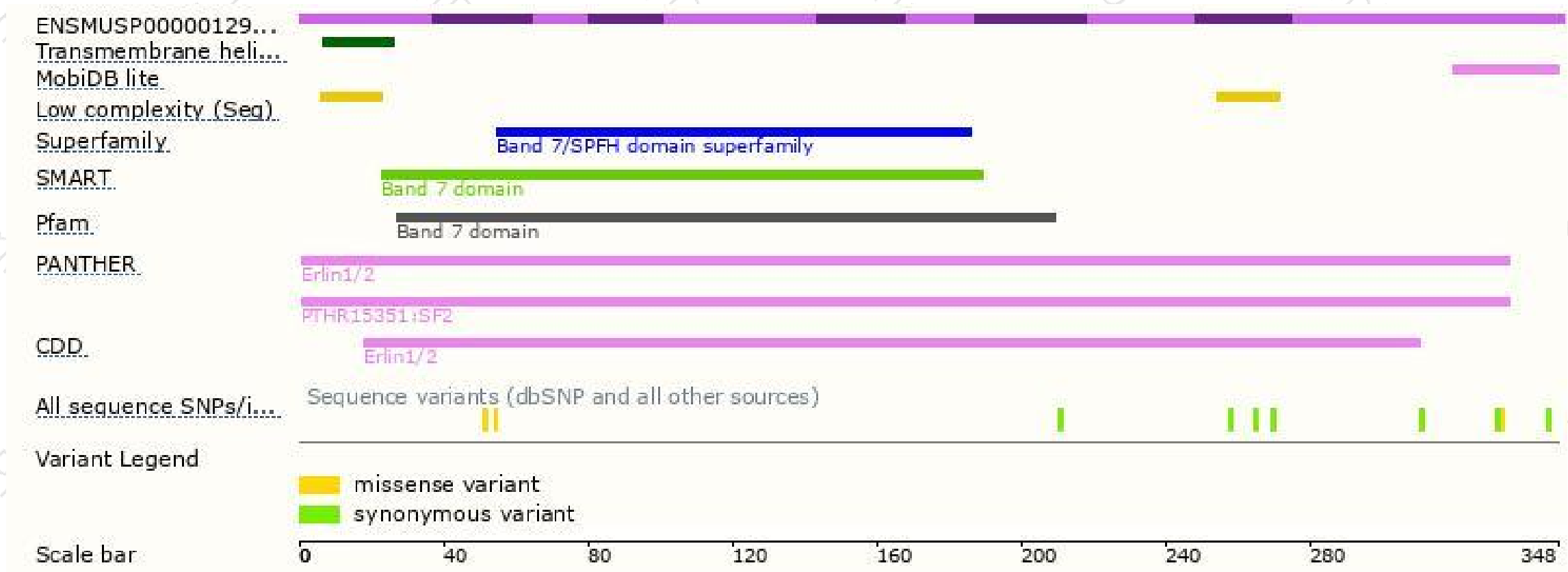
The strategy is based on the design of *Erlin1-201* transcript,the transcription is shown below:



集萃药康
GemPharmatech



Protein domain



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

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