

Skp2 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Skp2

Project type

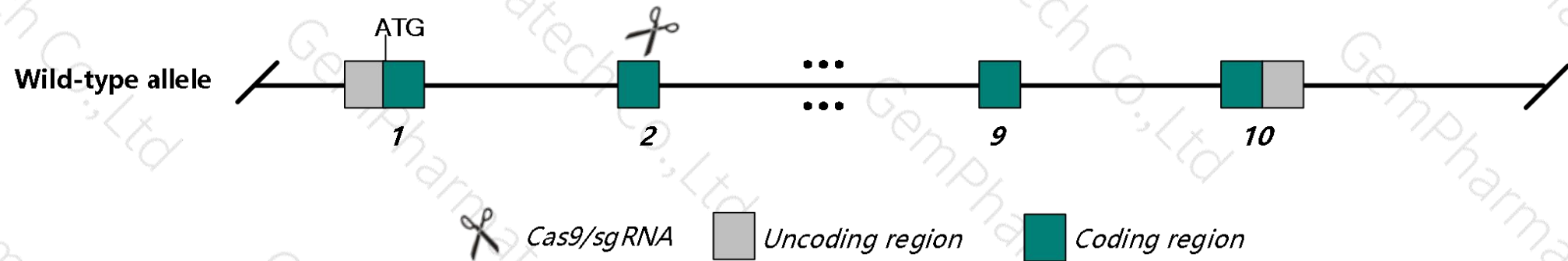
Cas9-KO

Strain background

C57BL/6N

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Skp2* gene. The schematic diagram is as follows:



- In this project we use CRISPR/Cas9 technology to modify *Skp2* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6N 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/6N mice.

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit reduced body weight, enlarged cell and nuclear sizes, polyploidy, reduced cell growth rate, overduplication of centrosomes, increased apoptosis rate, delayed wound healing, and aberrant immunoglobulin V(D)J recombination.
- The *Skp2* gene is located on the Chr15. 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)

Skp2 S-phase kinase-associated protein 2 (p45) [*Mus musculus* (house mouse)]

Gene ID: 27401, updated on 12-Aug-2019

Summary

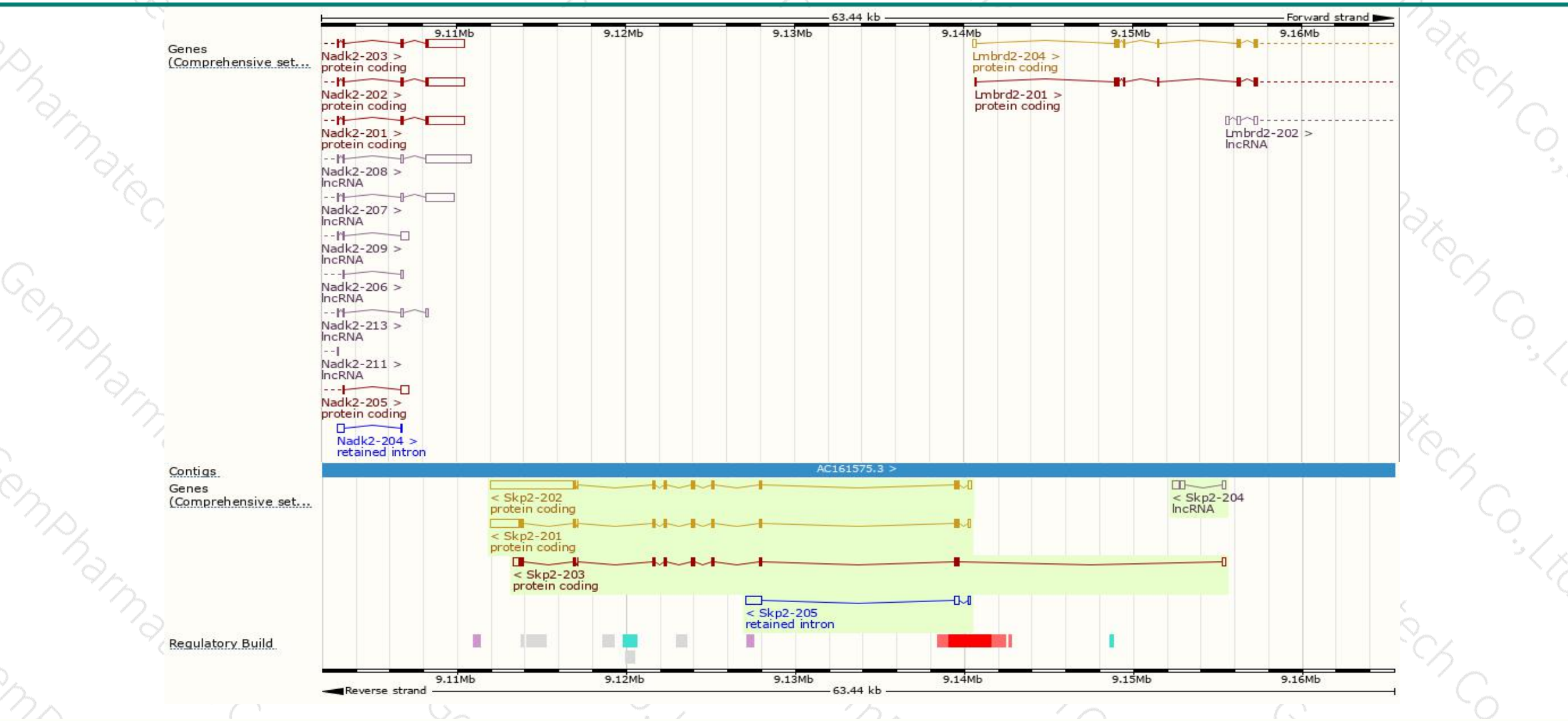
Official Symbol	Skp2 provided by MGI
Official Full Name	S-phase kinase-associated protein 2 (p45) provided by MGI
Primary source	MGI:MGI:1351663
See related	Ensembl:ENSMUSG00000054115
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	p45; FWD1; FBXL1; 4930500A04Rik
Expression	Biased expression in testis adult (RPKM 26.1), limb E14.5 (RPKM 12.8) and 9 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

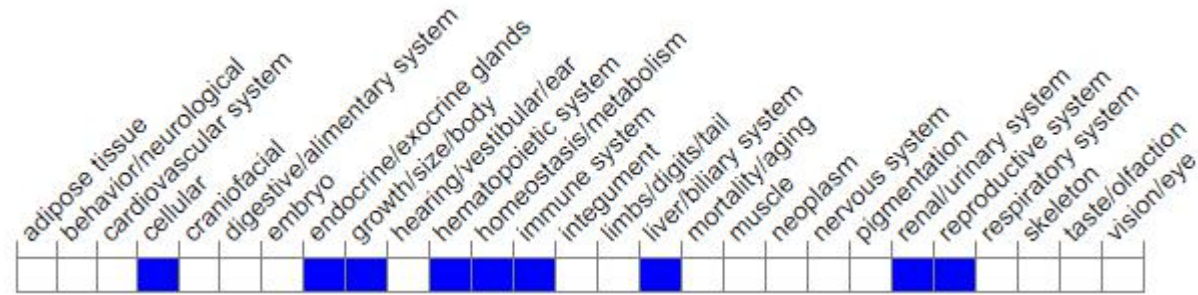
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Skp2-201	ENSMUST00000096482.9	3118	424aa	Protein coding	CCDS37037	Q569Z9 Q9Z0Z3	TSL:1 GENCODE basic APPRIS P1
Skp2-203	ENSMUST00000190131.1	1819	389aa	Protein coding	CCDS79360	A0A087WQ11	TSL:1 GENCODE basic
Skp2-202	ENSMUST00000110585.8	6185	354aa	Protein coding	-	Q9Z0Z3	TSL:1 GENCODE basic
Skp2-205	ENSMUST00000191316.1	1391	No protein	Retained intron	-	-	TSL:2
Skp2-204	ENSMUST00000190406.1	852	No protein	lncRNA	-	-	TSL:1

Genomic location distribution



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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