

Ryk Cas9-KO Strategy

Designer:

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Design Date:

2019-9-20

Project Overview

Project Name

Ryk

Project type

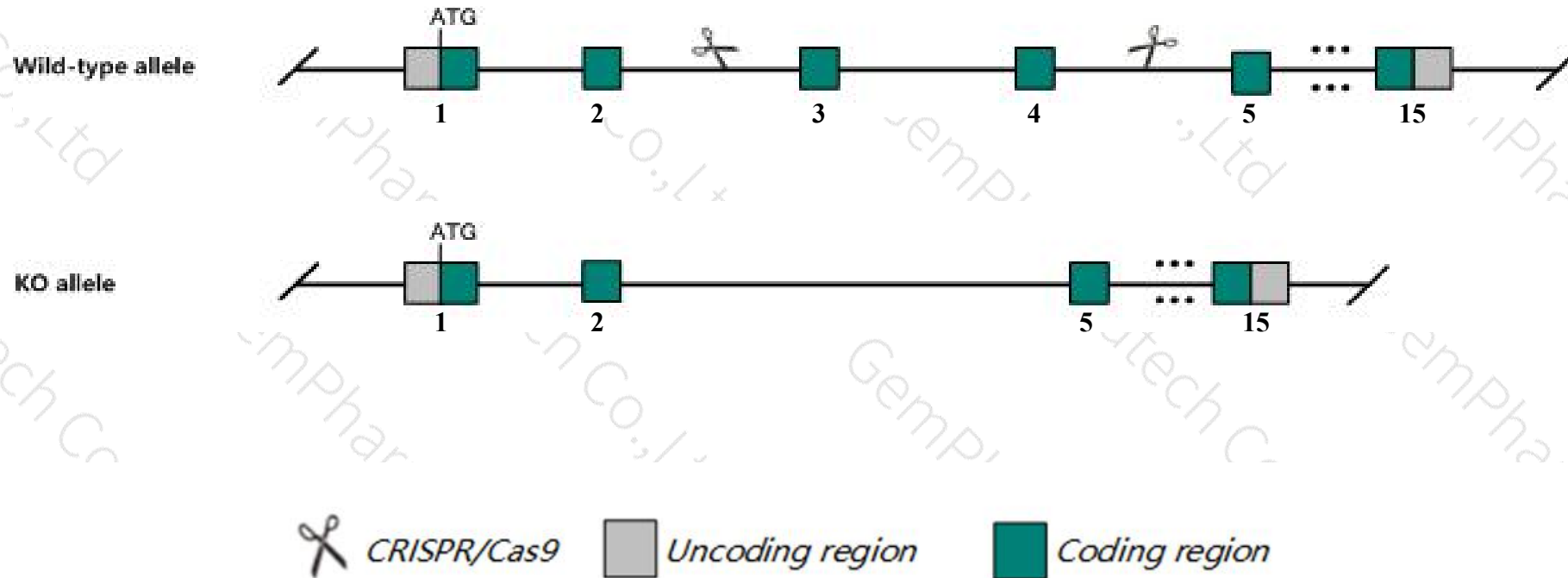
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



The *Ryk* gene has 6 transcripts. According to the structure of *Ryk* gene, exon3-exon4 of *Ryk*-203

(ENSMUST00000175883.7) transcript is recommended as the knockout region. The region contains 235bp coding sequence.

Knock out the region will result in disruption of protein function.

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

- According to the existing MGI data, Homozygous null mice have a distinctive craniofacial appearance, shortened limbs and postnatal mortality due to feeding and respiratory complications associated with a complete cleft of the secondary palate.
- The *Ryk* gene is located on the Chr9. 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)

Ryk receptor-like tyrosine kinase [Mus musculus (house mouse)]

Gene ID: 20187, updated on 9-Feb-2019

Summary



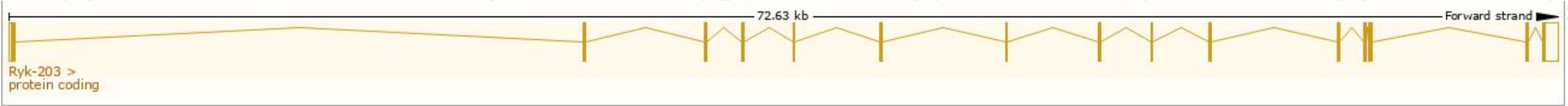
Official Symbol	Ryk provided by MGI
Official Full Name	receptor-like tyrosine kinase provided by MGI
Primary source	MGI:MGI:101766
See related	Ensembl:ENSMUSG00000032547
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW536699, ERK-3, Vik
Expression	Ubiquitous expression in bladder adult (RPKM 22.9), lung adult (RPKM 22.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

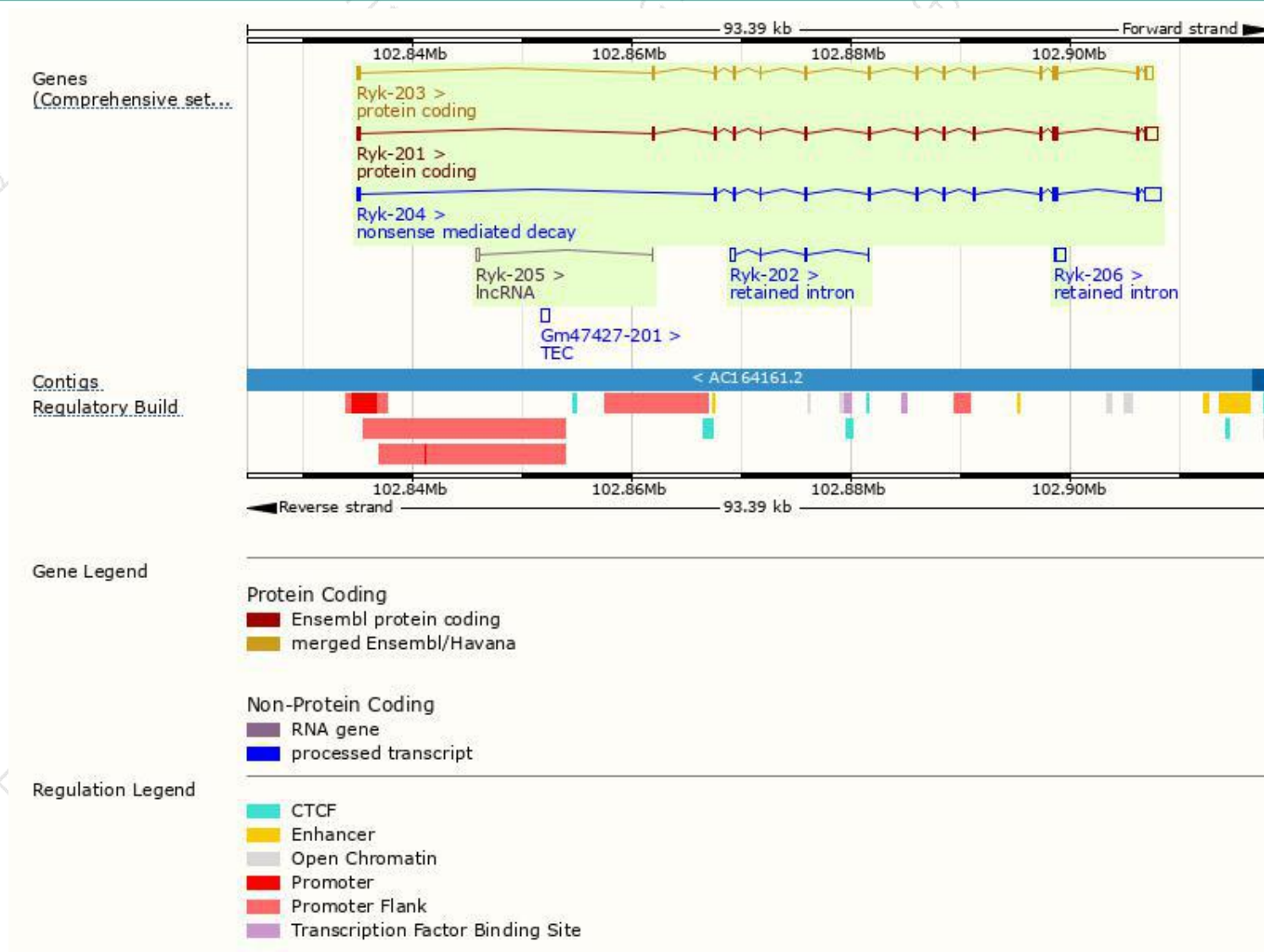
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ryk-201	ENSMUST00000035142.7	2852	591aa	Protein coding	CCDS57696	H9H9R6	TSL:1 GENCODE basic APPRIS ALT2
Ryk-203	ENSMUST00000175883.7	2505	594aa	Protein coding	CCDS40747	Q01887	TSL:1 GENCODE basic APPRIS P3
Ryk-204	ENSMUST00000176198.7	3072	62aa	Nonsense mediated decay	-	H3BKH8	TSL:1
Ryk-206	ENSMUST00000177274.2	870	No protein	Retained intron	-	-	TSL:1
Ryk-202	ENSMUST00000175788.1	551	No protein	Retained intron	-	-	TSL:3
Ryk-205	ENSMUST00000176573.1	386	No protein	lncRNA	-	-	TSL:5

The strategy is based on the design of *Ryk-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



集萃药康
GemPharmatech



Mouse phenotype description(MGI)



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

According to the existing MGI data, Homozygous null mice have a distinctive craniofacial appearance, shortened limbs and postnatal mortality due to feeding and respiratory complications associated with a complete cleft of the secondary palate.

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

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