

Bfar Cas9-KO Strategy

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Project Overview

Project Name

Bfar

Project type

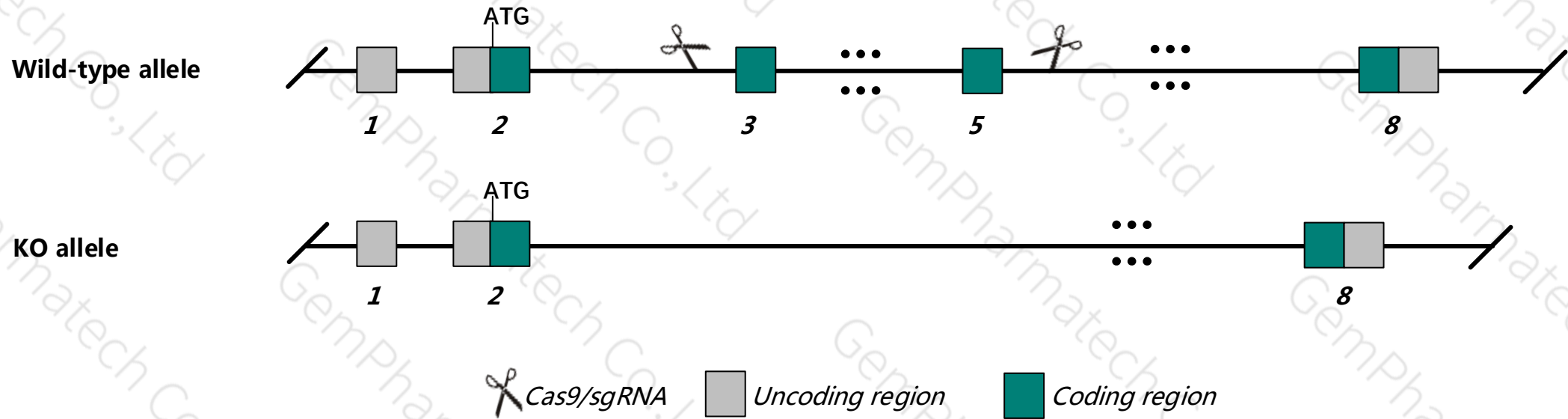
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



Technical routes

- The *Bfar* gene has 8 transcripts. According to the structure of *Bfar* gene, exon3-exon5 of *Bfar*-201 (ENSMUST00000023365.12) transcript is recommended as the knockout region. The region contains 520bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Bfar* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9, sgRNA 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 *Bfar* gene is located on the Chr16. 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)

Bfar bifunctional apoptosis regulator [*Mus musculus* (house mouse)]

Gene ID: 67118, updated on 12-Aug-2019

Summary

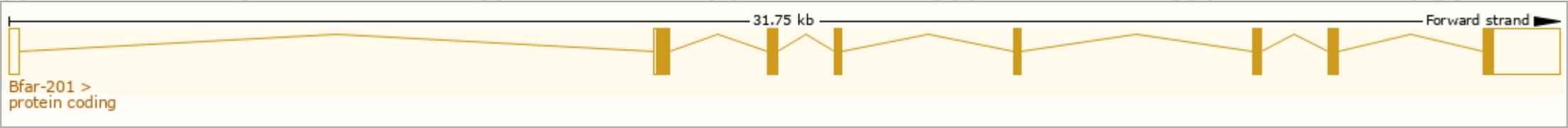
Official Symbol	Bfar provided by MGI
Official Full Name	bifunctional apoptosis regulator provided by MGI
Primary source	MGI:MGI:1914368
See related	Ensembl:ENSMUSG00000022684 Ensembl:ENSMUSG00000079737
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<i>Mus musculus</i>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Bar; Rnf47; AI666707; AW107665; 3010001A07Rik; 3110001I22Rik
Expression	Ubiquitous expression in bladder adult (RPKM 14.9), subcutaneous fat pad adult (RPKM 12.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

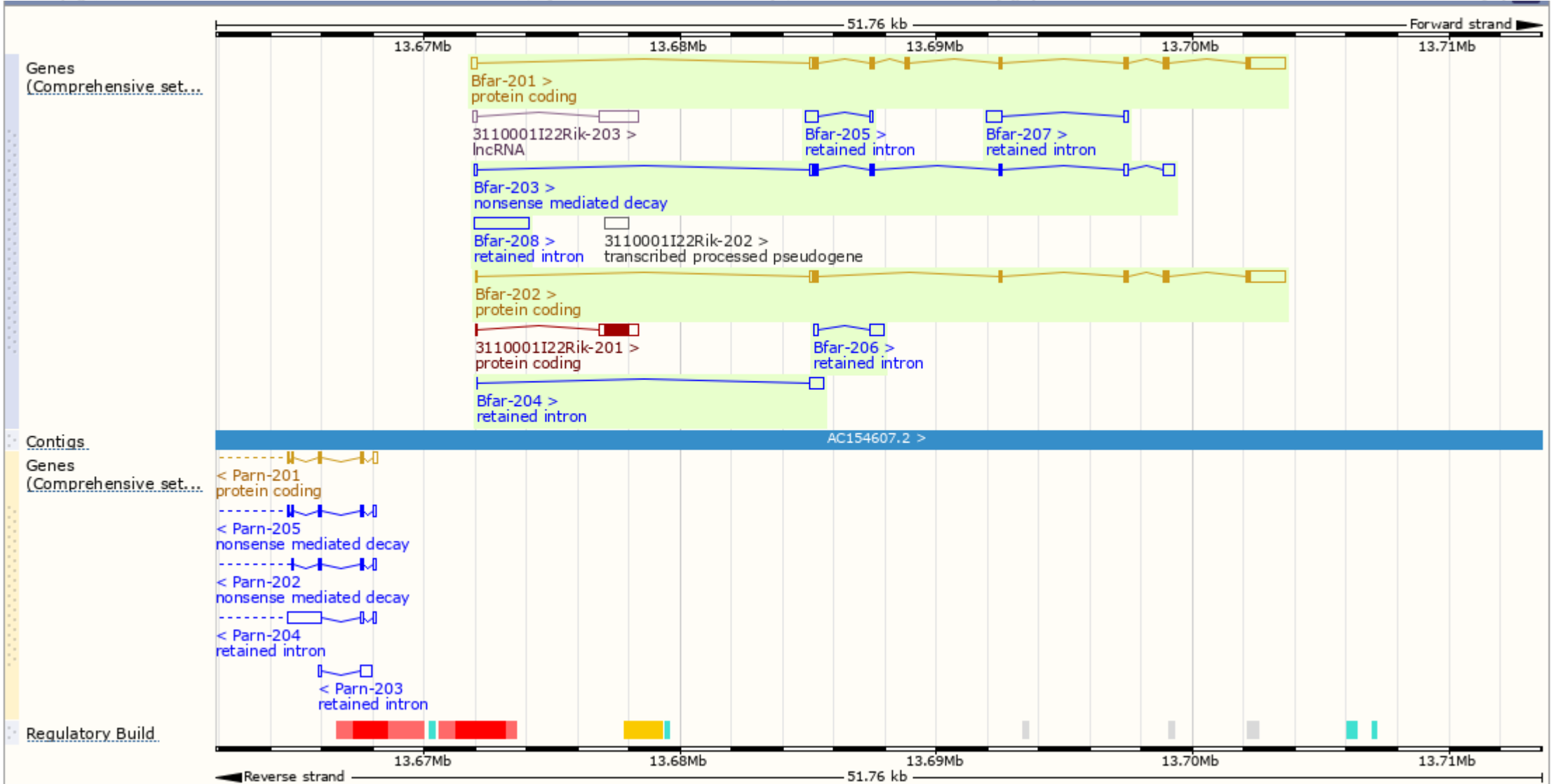
The gene has 8 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Bfar-201	ENSMUST00000023365.12	3003	450aa	Protein coding	CCDS27966	A0A0R4J040	TSL:1 GENCODE basic APPRIS P1
Bfar-202	ENSMUST00000069281.7	2456	325aa	Protein coding	CCDS49769	Q8R079	TSL:1 GENCODE basic
Bfar-203	ENSMUST00000127973.7	1407	176aa	Nonsense mediated decay	-	D6RG73	TSL:1
Bfar-208	ENSMUST00000230905.1	2121	No protein	Retained intron	-	-	-
Bfar-207	ENSMUST00000154568.1	787	No protein	Retained intron	-	-	TSL:2
Bfar-206	ENSMUST00000148079.1	750	No protein	Retained intron	-	-	TSL:1
Bfar-205	ENSMUST00000144804.1	659	No protein	Retained intron	-	-	TSL:1
Bfar-204	ENSMUST00000132349.1	572	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Bfar-201* 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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