

Bsg Cas9-KO Strategy

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Design Date:

2019-9-28

Project Overview

Project Name

Bsg

Project type

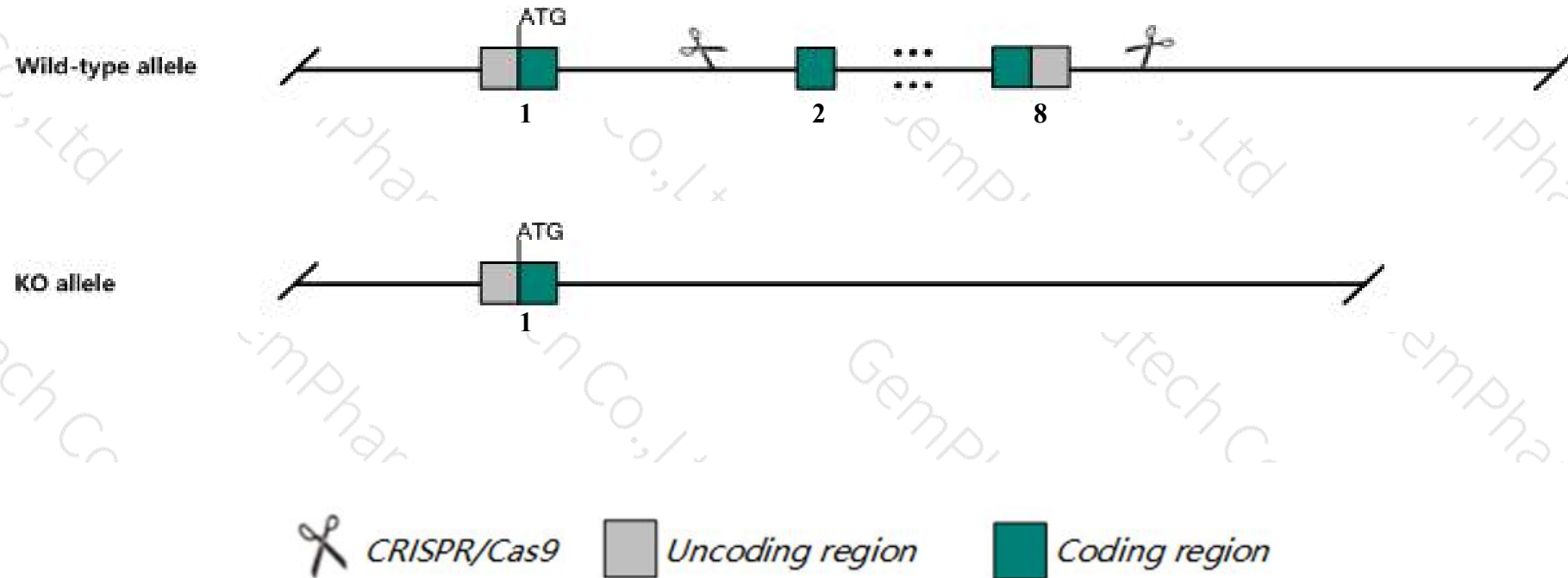
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Bsg* gene has 6 transcripts. According to the structure of *Bsg* gene, exon2-exon8 of *Bsg-201* (ENSMUST00000067036.11) transcript is recommended as the knockout region. The region contains 1103bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Bsg* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, Most homozygous null mutants die near the time of implantation. Half of the survivors die prior to 1 month of age from interstitial pneumonia. The remaining mice are small, sterile, have retinal abnormalities, and perform poorly in behavioral tests.
- The *Bsg* gene is located on the Chr10. 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)

Bsg basigin [Mus musculus (house mouse)]

Gene ID: 12215, updated on 31-Jan-2019

Summary



Official Symbol	Bsg provided by MGI
Official Full Name	basigin provided by MGI
Primary source	MGI:MGI:88208
See related	Ensembl:ENSMUSG00000023175
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	AI115436, AI325119, CD147, EMMPRIN, HT-7
Expression	Ubiquitous expression in heart adult (RPKM 307.0), placenta adult (RPKM 296.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

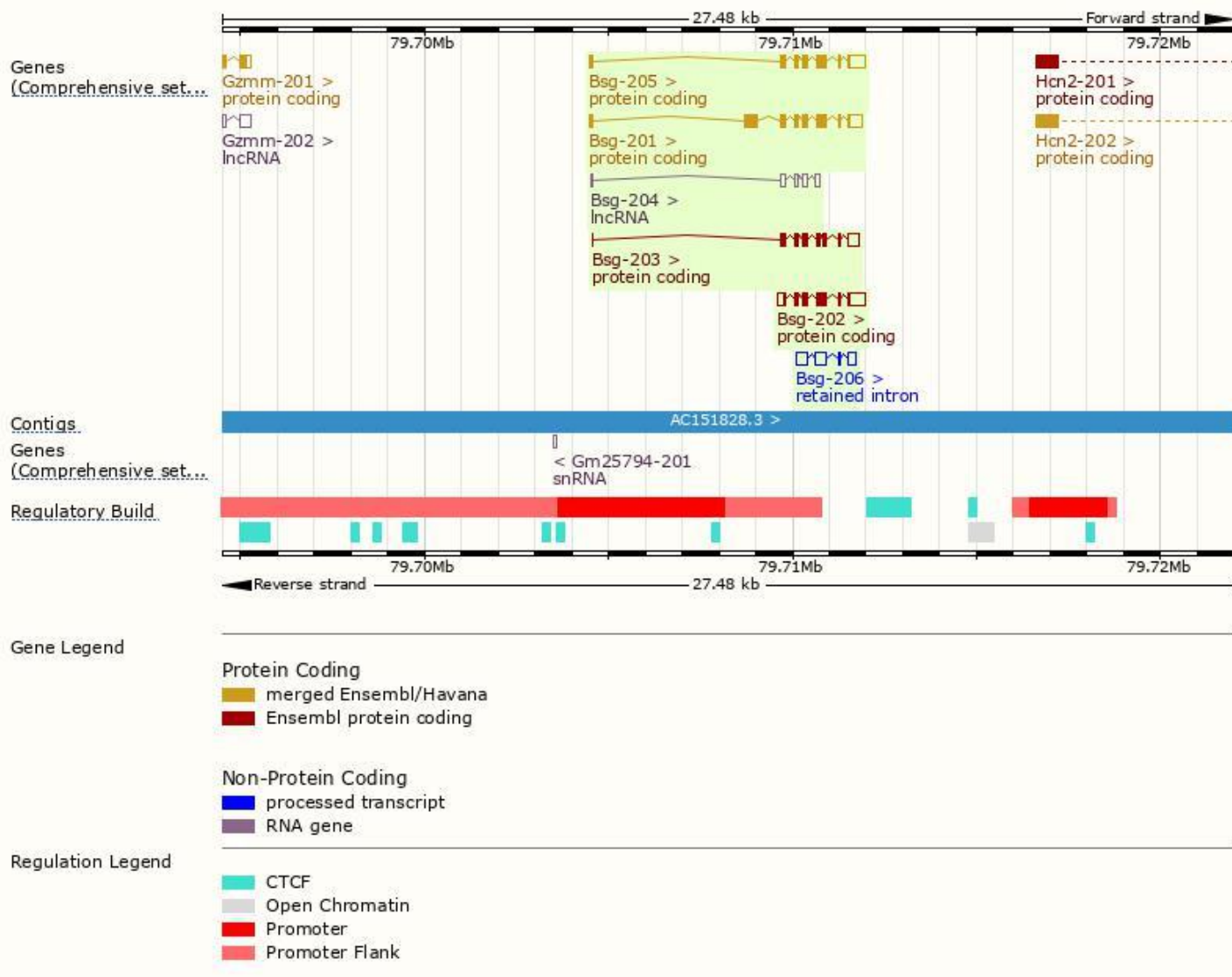
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Bsg-201	ENSMUST00000067036.11	1526	389aa	Protein coding	CCDS23985	P18572	TSL:1 GENCODE basic APPRIS P1
Bsg-205	ENSMUST00000179781.7	1261	273aa	Protein coding	CCDS35967	P18572	TSL:1 GENCODE basic
Bsg-202	ENSMUST00000105381.4	1240	218aa	Protein coding	-	K3W4Q8	TSL:1 GENCODE basic
Bsg-203	ENSMUST00000178383.7	921	197aa	Protein coding	-	J3QP71	CDS 5' incomplete TSL:5
Bsg-206	ENSMUST00000180235.1	836	No protein	Retained intron	-	-	TSL:3
Bsg-204	ENSMUST00000179201.1	564	No protein	lncRNA	-	-	TSL:3

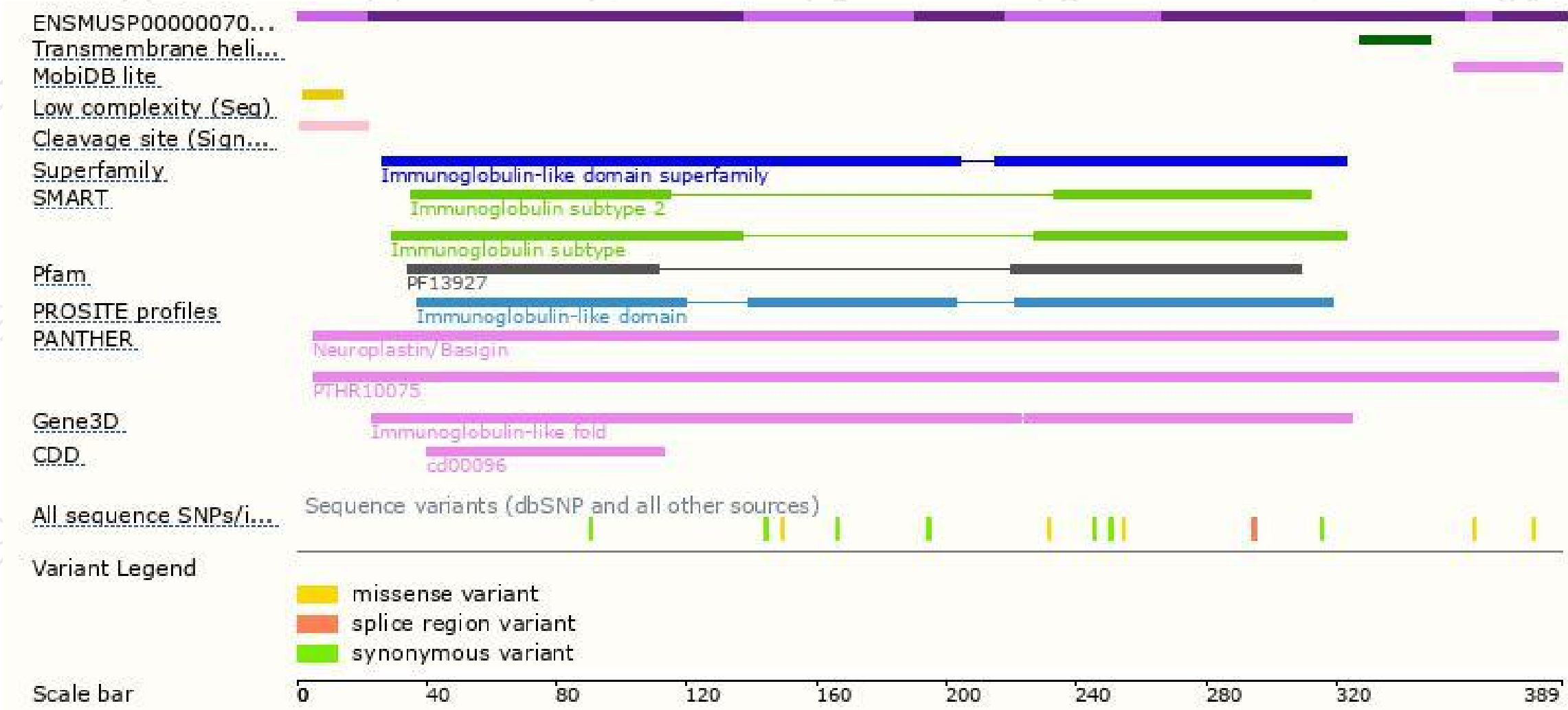
The strategy is based on the design of *Bsg-201* transcript,The transcription is shown below



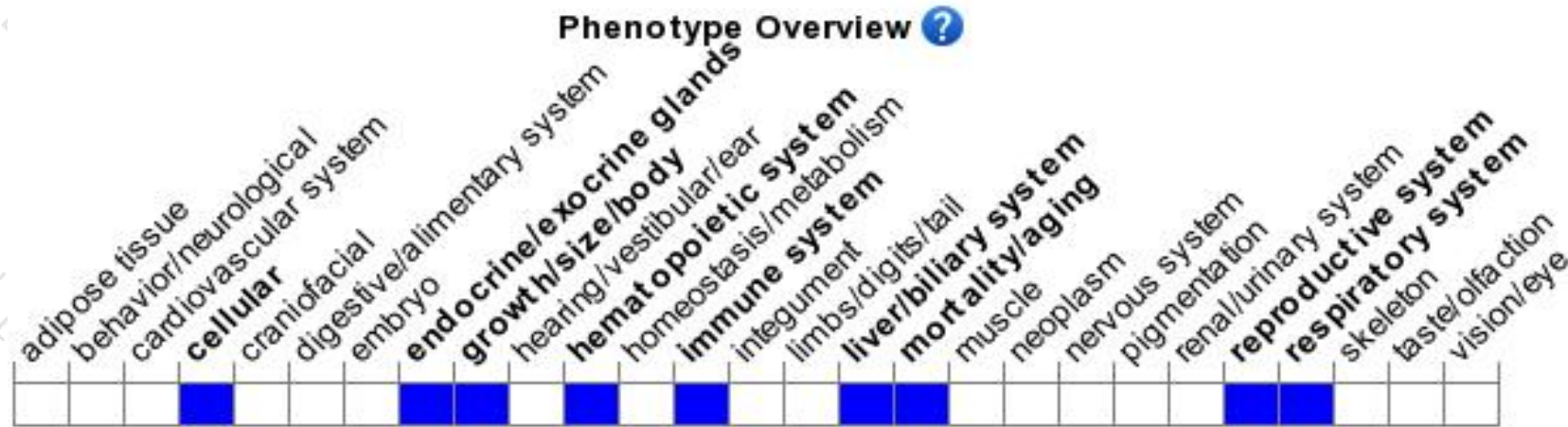
Genomic location distribution



Protein domain



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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