

H2bu2 Cas9-KO Strategy

Designer:

Yanhua Shen

Reviewer:

Xueting Zhang

Design Date:

2020-4-23

Project Overview

Project Name

H2bu2

Project type

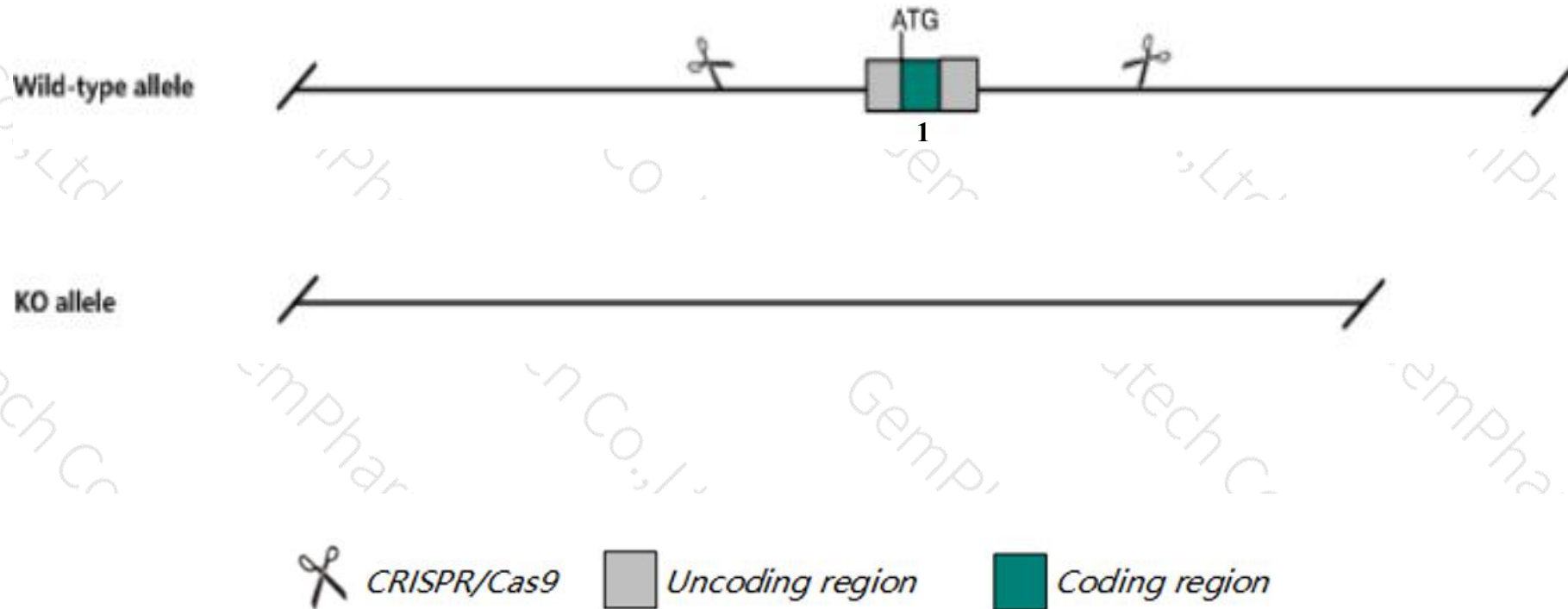
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *H2bu2* gene. The schematic diagram is as follows:



- The *H2bu2* gene has 1 transcript. According to the structure of *H2bu2* gene, exon1 of *H2bu2-201* (ENSMUST00000078267.4) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *H2bu2* gene. The brief process is as follows: CRISPR/Cas9 system

- The *H2bu2* gene is located on the Chr11. 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)

H2bu2 H2B.U histone 2 [Mus musculus (house mouse)]

Gene ID: 78303, updated on 13-Mar-2020

Summary



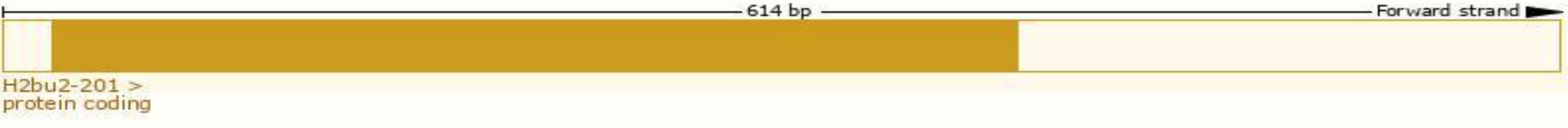
Official Symbol	H2bu2 provided by MGI
Official Full Name	H2B.U histone 2 provided by MGI
Primary source	MGI:MGI:1925553
See related	Ensembl:ENSMUSG00000056895
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1500011O09Rik, AI413321, Hist3h2ba
Summary	Histones are basic nuclear proteins that are responsible for the nucleosome structure of the chromosomal fiber in eukaryotes. Nucleosomes consist of approximately 146 bp of DNA wrapped around a histone octamer composed of pairs of each of the four core histones (H2A, H2B, H3, and H4). The chromatin fiber is further compacted through the interaction of a linker histone, H1, with the DNA between the nucleosomes to form higher order chromatin structures. This gene is intronless and encodes a replication-dependent histone that is a member of the histone H2B family. [provided by RefSeq, Sep 2015]
Orthologs	human all

Transcript information (Ensembl)

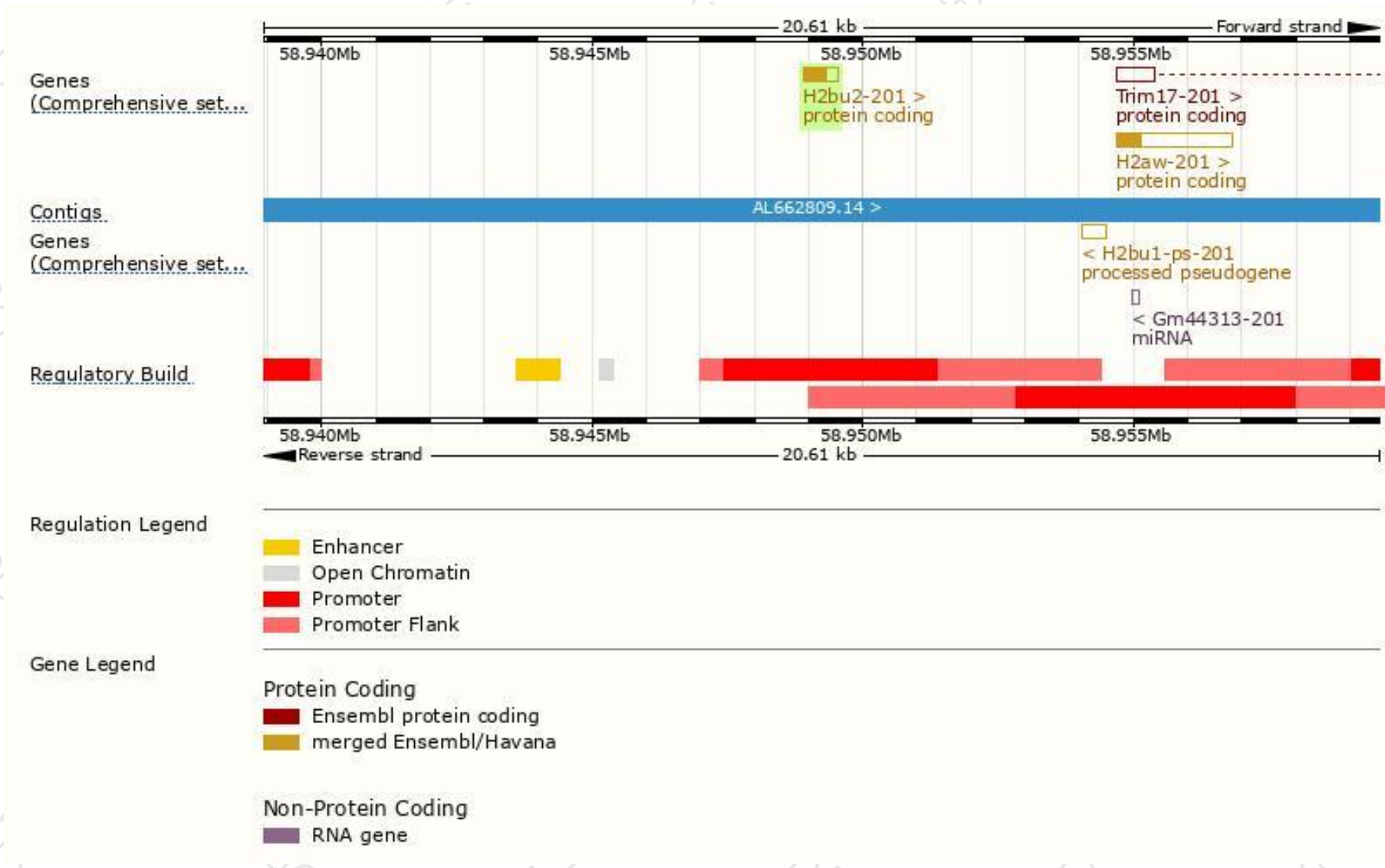
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
H2bu2-201	ENSMUST00000078267.4	614	126aa	Protein coding	CCDS24754	Q9D2U9	TSL:NA GENCODE basic APPRIS P1

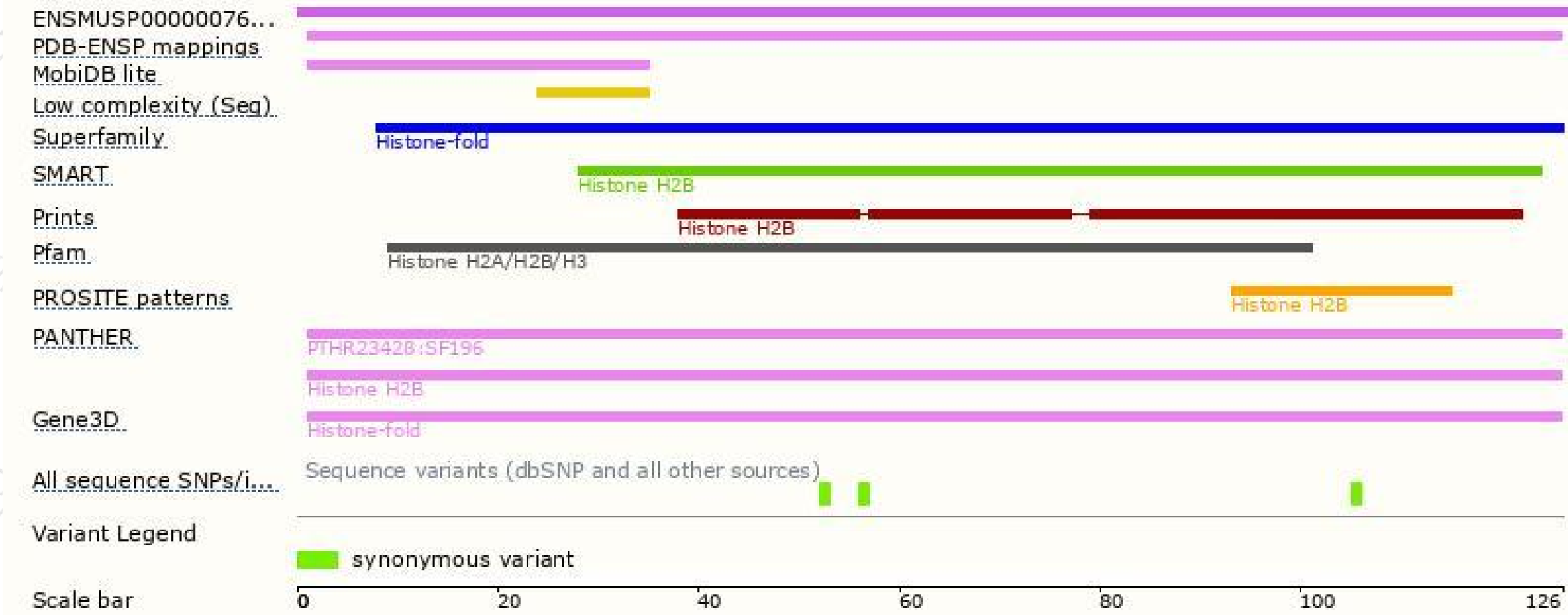
The strategy is based on the design of *H2bu2-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

