Fchsd2 Cas9-KO Strategy

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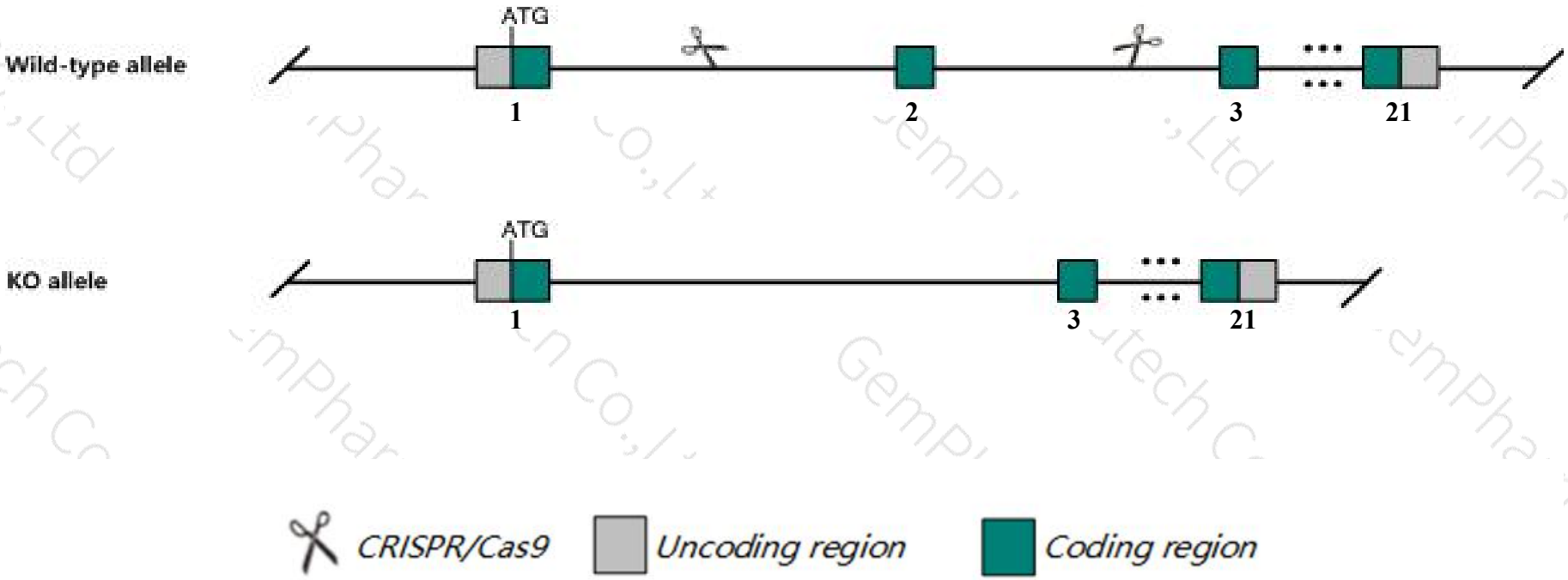
Design Date: 2019-7-18

Project Overview

Project Name	***Fchsd2***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fchsd2* gene. The schematic diagram is as follows:



Technical routes

➢ The *Fchsd2* gene has 11 transcripts. According to the structure of *Fchsd2* gene, exon2 of *Fchsd2-201* (ENSMUST00000032931.8) transcript is recommended as the knockout region.The region contains 98bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Fchsd2* gene. The brief process is as follows: CRISPR/Cas9 syster

Notice

➢ The *Fchsd2* gene is located on the Chr7. 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）

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Fchsd2 FCH and double SH3 domains 2 [Mus musculus (house mouse)]

Gene ID: 207278, updated on 19-Mar-2019

Summary

Official Symbol	Fchsd2 provided by MGI
Official Full Name	FCH and double SH3 domains 2 provided by MGI
Primary source	MGI:MGI:2448475
See related	Ensembl:ENSMUSG00000030691
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	BC034086, NWK1, R74866, Sh3md3, mKIAA0769
Expression	Ubiquitous expression in CNS E18 (RPKM 15.4), whole brain E14.5 (RPKM 12.6) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

The gene has 11 transcripts,all transcripts are shown below:

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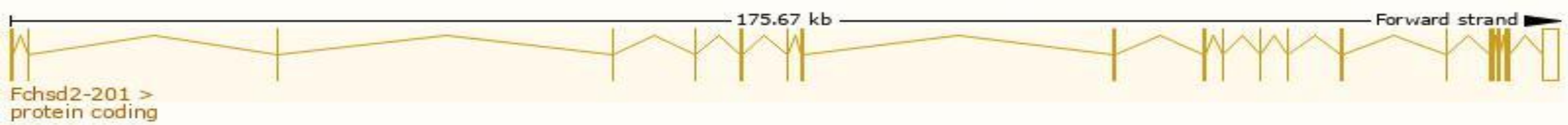
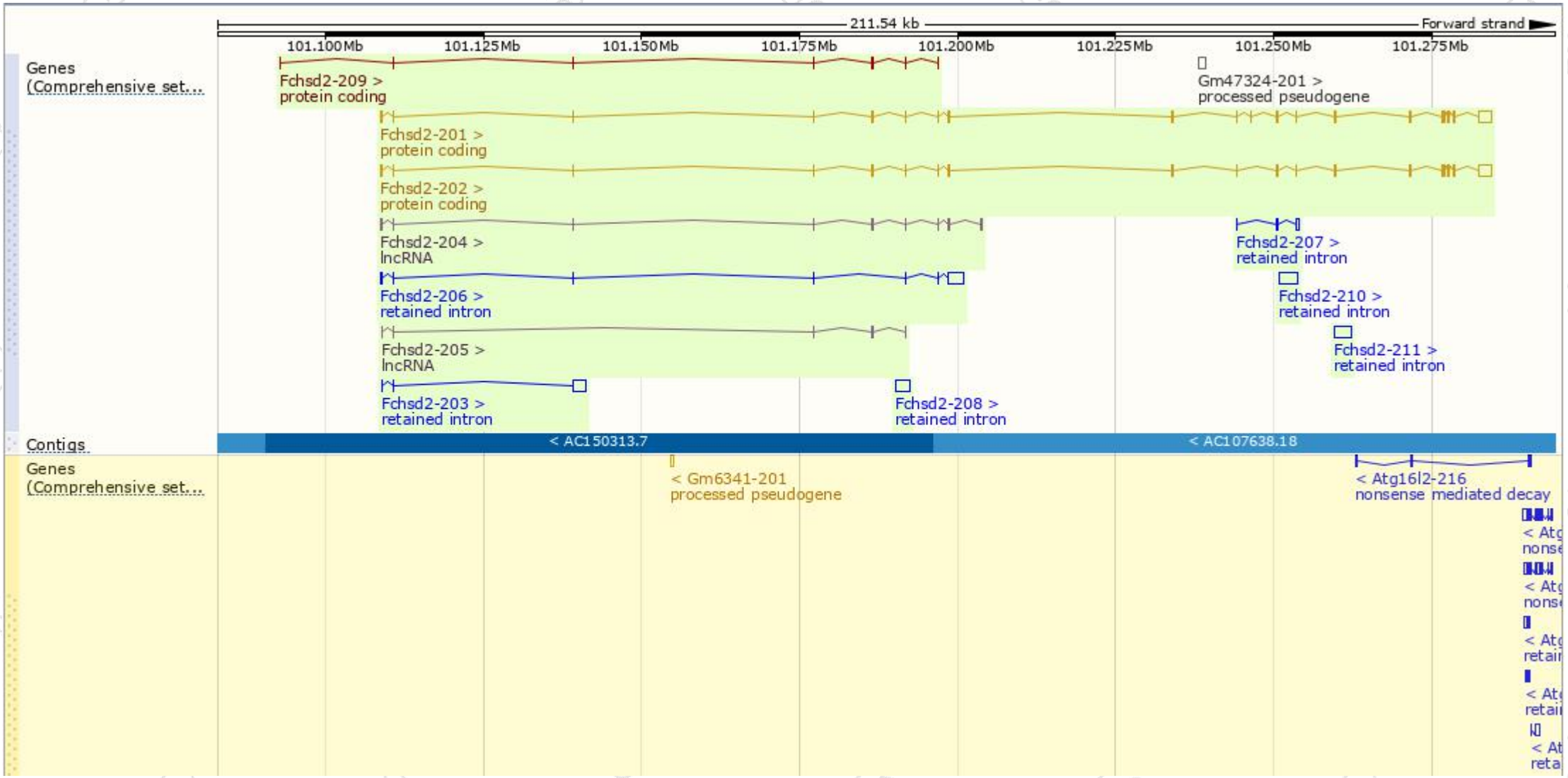
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fchsd2-201	ENSMUST00000032931.8	4453	764aa	Protein coding	CCDS52327	Q3USJ8	TSL:1 GENCODE basic APPRIS P4
Fchsd2-202	ENSMUST00000098250.9	4316	740aa	Protein coding	CCDS52328	Q3USJ8	TSL:1 GENCODE basic APPRIS ALT1
Fchsd2-209	ENSMUST00000208439.1	588	179aa	Protein coding	-	A0A140LIU6	CDS 3' incomplete TSL:5
Fchsd2-206	ENSMUST00000145802.7	3133	No protein	Retained intron	-	-	TSL:2
Fchsd2-210	ENSMUST00000208638.1	3006	No protein	Retained intron	-	-	TSL:NA
Fchsd2-211	ENSMUST00000208917.1	2685	No protein	Retained intron	-	-	TSL:NA
Fchsd2-203	ENSMUST00000130426.1	2235	No protein	Retained intron	-	-	TSL:2
Fchsd2-208	ENSMUST00000208063.1	2188	No protein	Retained intron	-	-	TSL:NA
Fchsd2-207	ENSMUST00000151693.1	607	No protein	Retained intron	-	-	TSL:3
Fchsd2-204	ENSMUST00000137196.7	1155	No protein	lncRNA	-	-	TSL:1
Fchsd2-205	ENSMUST00000142727.1	528	No protein	lncRNA	-	-	TSL:3

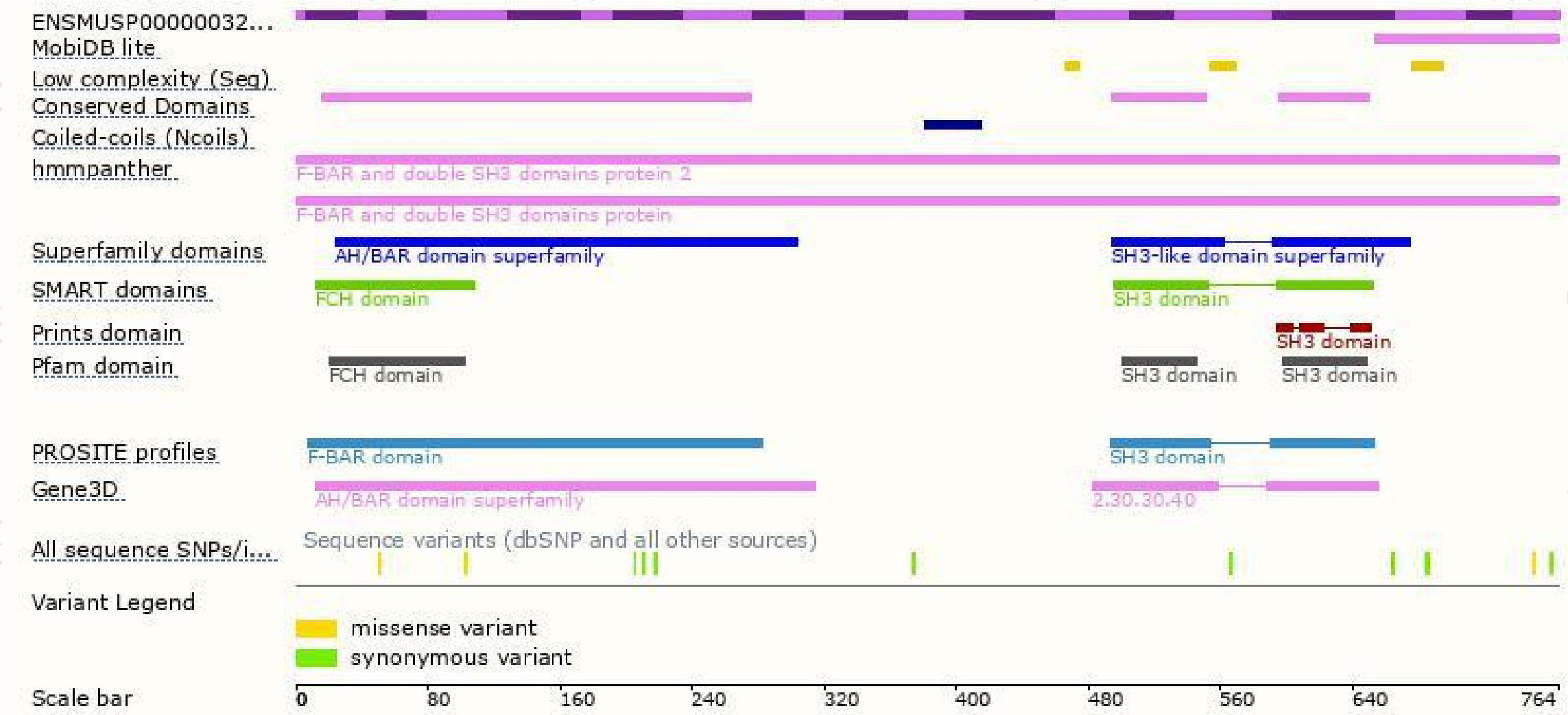
The strategy is based on the design of *Fchsd2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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