

Cdh16 Cas9-CKO Strategy

Designer:

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Project Overview

Project Name

Cdh16

Project type

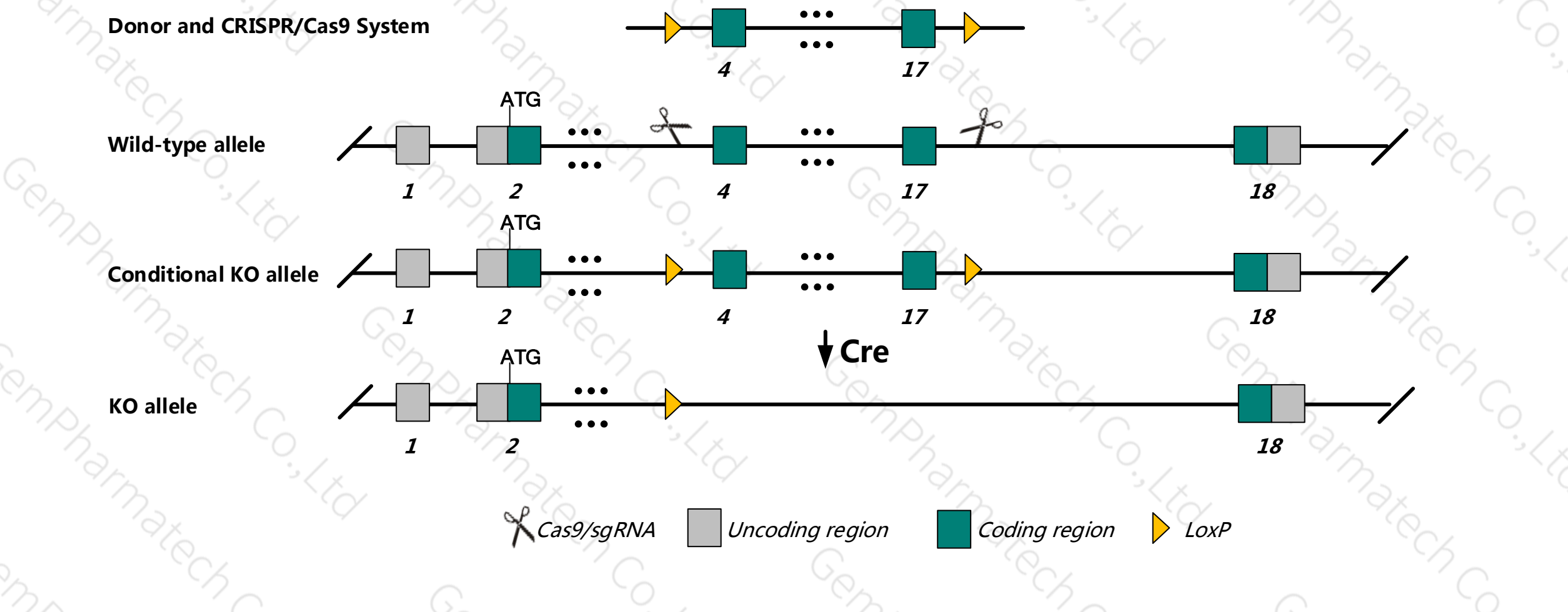
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cdh16* gene. The schematic diagram is as follows:



- The *Cdh16* gene has 14 transcripts, According to the structure of *Cdh16* gene, exon4-17 of *Cdh16*-204 transcript is recommended as the knockout region. The region contains the 2263bp most of coding sequence. Knock out the region, result in destruction of protein.
- In this project we use CRISPR/Cas9 technology to modify *Cdh16* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor 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 flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues or cell types.

- Transcript *Cdh16-206* may not be affected.
- The *Cdh16* gene is located on the Chr8. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Cdh16 cadherin 16 [*Mus musculus* (house mouse)]

Gene ID: 12556, updated on 31-Jan-2019

Summary

Official Symbol	Cdh16 provided by MGI
Official Full Name	cadherin 16 provided by MGI
Primary source	MGI:MGI:106671
See related	Ensembl:ENSMUSG00000031881
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
Expression	Restricted expression toward kidney adult (RPKM 275.2) See more
Orthologs	human all

Genomic context

Location: 8 D3; 8 53.04 cM

See Cdh16 in [Genome Data Viewer](#)

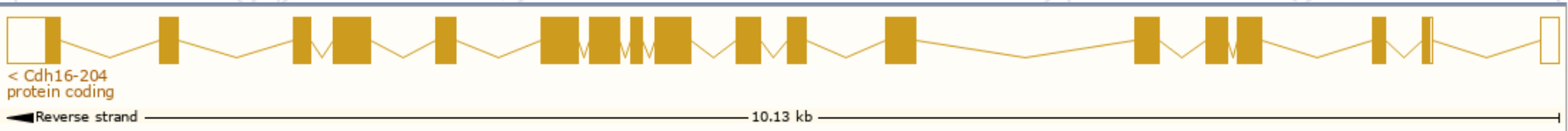
Exon count: 19

Transcript information (Ensembl)

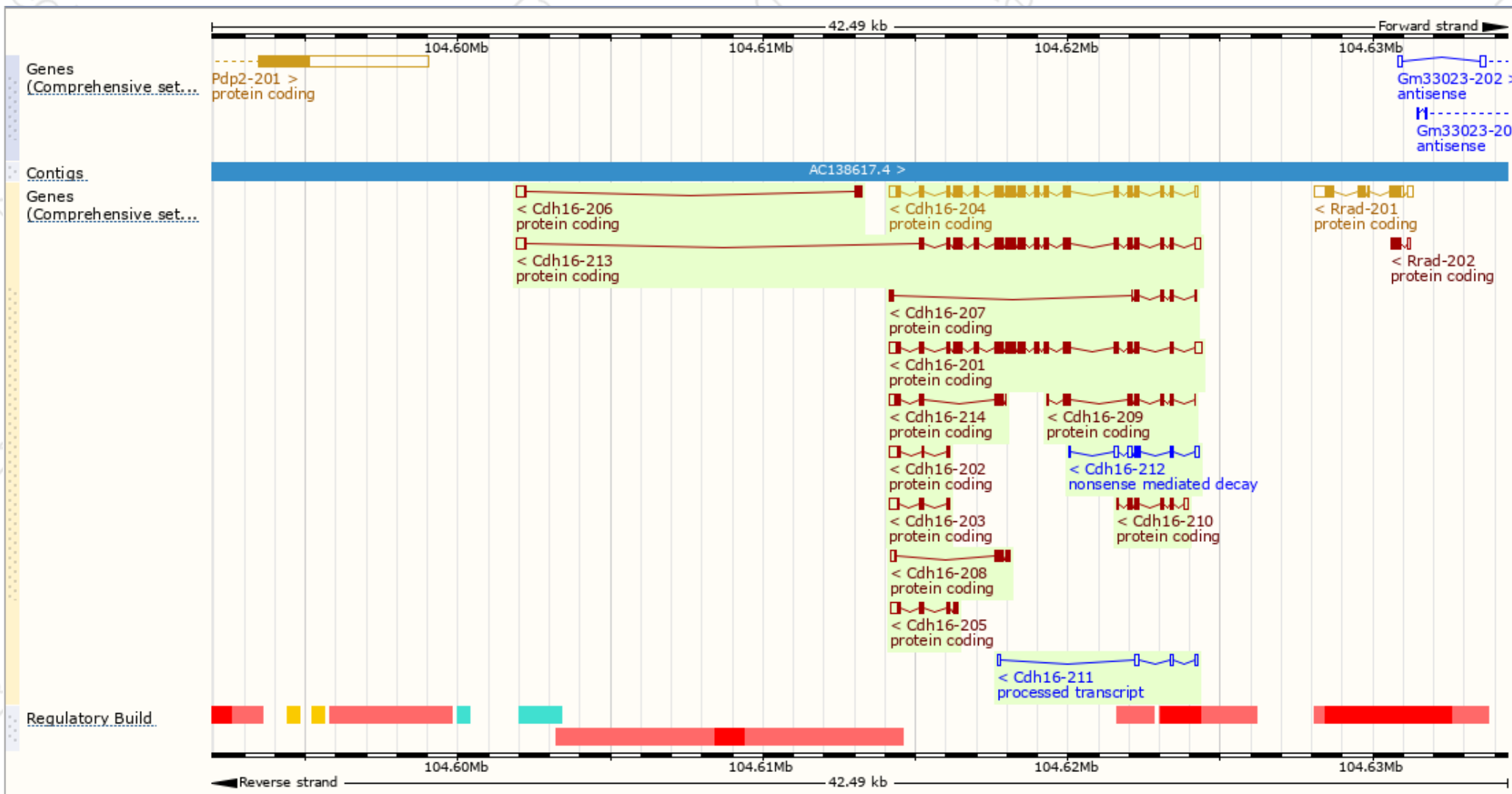
The gene has 14 transcripts, and all transcripts are shown below :

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cdh16-213	ENSMUST00000212882.1	2923	815aa	Protein coding	CCDS85595	Q8C730	TSL:1 GENCODE basic APPRIS ALT2
Cdh16-201	ENSMUST00000163783.3	2910	800aa	Protein coding	CCDS85594	Q3TPA4	TSL:1 GENCODE basic APPRIS ALT2
Cdh16-204	ENSMUST00000211903.1	2874	830aa	Protein coding	CCDS22583	O88338 Q546A8	TSL:1 GENCODE basic APPRIS P3
Cdh16-214	ENSMUST00000213033.1	733	179aa	Protein coding	-	A0A1D5RMA8	CDS 5' incomplete TSL:5
Cdh16-209	ENSMUST00000212447.1	720	223aa	Protein coding	-	A0A1D5RMM2	CDS 3' incomplete TSL:5
Cdh16-205	ENSMUST00000212045.1	646	149aa	Protein coding	-	A0A1D5RM27	CDS 5' incomplete TSL:3
Cdh16-210	ENSMUST00000212662.1	632	163aa	Protein coding	-	A0A1D5RMI6	CDS 3' incomplete TSL:3
Cdh16-208	ENSMUST00000212420.1	594	142aa	Protein coding	-	A0A1D5RMB7	CDS 5' incomplete TSL:5
Cdh16-206	ENSMUST00000212318.1	586	98aa	Protein coding	-	A0A1D5RLE7	CDS 5' incomplete TSL:5
Cdh16-203	ENSMUST00000211889.1	519	93aa	Protein coding	-	A0A1D5RLS8	CDS 5' incomplete TSL:5
Cdh16-207	ENSMUST00000212324.1	506	141aa	Protein coding	-	A0A1D5RLG9	CDS 3' incomplete TSL:5
Cdh16-202	ENSMUST00000211849.1	474	75aa	Protein coding	-	A0A1D5RL88	CDS 5' incomplete TSL:3
Cdh16-212	ENSMUST00000212748.1	730	58aa	Nonsense mediated decay	-	A0A1D5RMK0	TSL:5
Cdh16-211	ENSMUST00000212689.1	421	No protein	Processed transcript	-	-	TSL:5

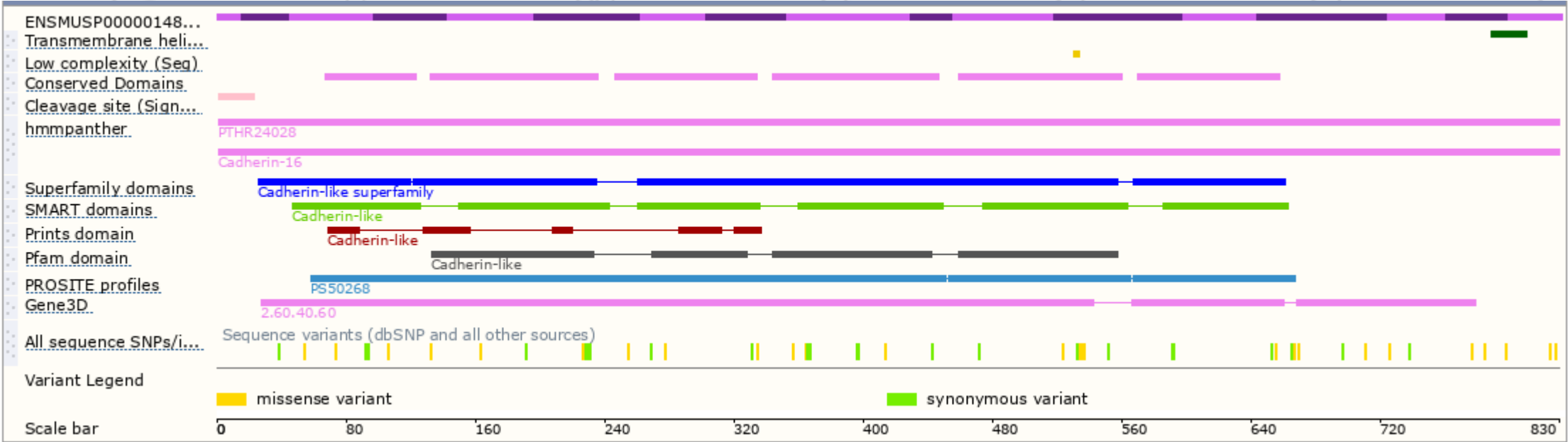
The strategy is based on the design of *Cdh16-204* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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