# *Neurod6* Cas9-KO Strategy

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# Project Overview

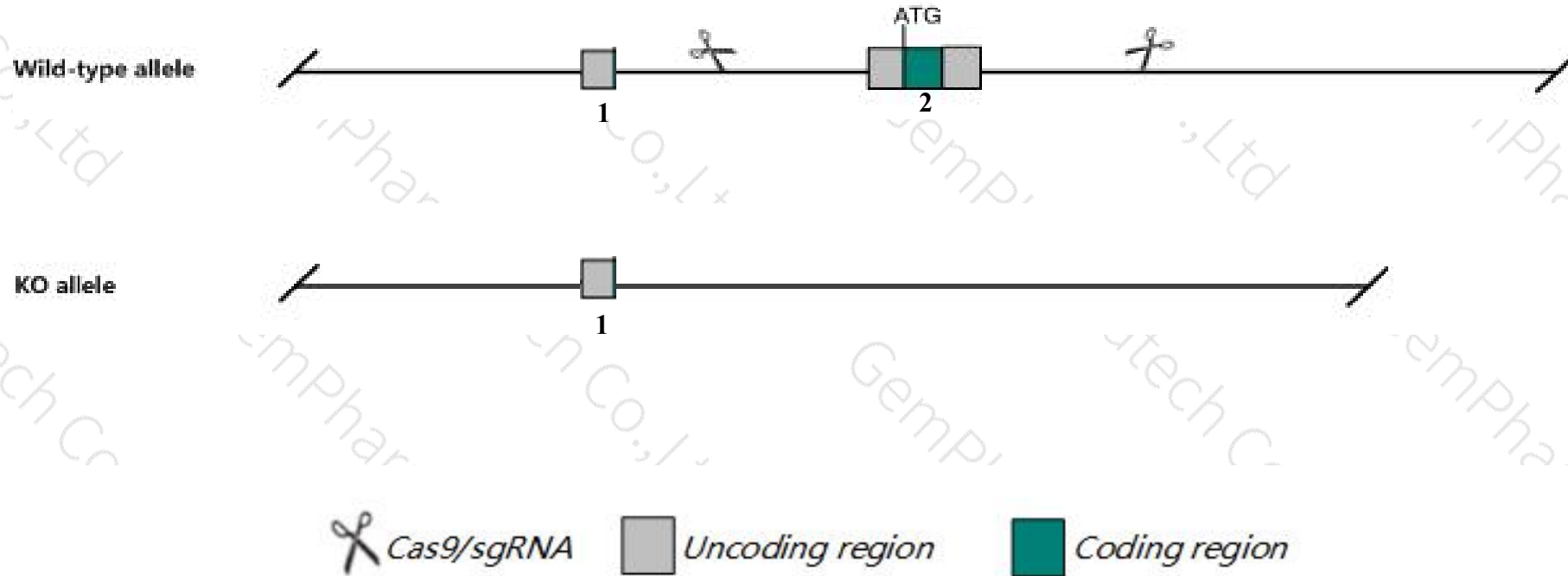| | |
|---|---|
| **Project Name** | *Neurod6* |
| **Project type** | **Cas9-KO** |
| **Strain background** | **C57BL/6JGpt** |

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Neurod6* gene. The schematic diagram is as follows:

# Technical routes

➢ The *Neurod6* gene has 1 transcript. According to the structure of *Neurod6* gene, exon2 of *Neurod6-201* (ENSMUST00000044767.9) 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 *Neurod6* gene. The brief process is as follows: CRISPR/Cas9 syste

# Notice

➢ According to the existing MGI data,Mice homozygous for a targeted null mutation are viable and fertile and exhibit an apparently normal differentiation of CNS neurons with no obvious behavioral or motor abnormalities.

➢ The *Neurod6* gene is located on the Chr6. 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）

**Neurod6**  neurogenic differentiation 6 [ *Mus musculus* (house mouse) ]

Gene ID: 11922, updated on 19-Nov-2019

## ▲ Summary

| | |
|---|---|
| **Official Symbol** | Neurod6  provided by MGI |
| **Official Full Name** | neurogenic differentiation 6  provided by MGI |
| **Primary source** | MGI:MGI:106593 |
| **See related** | Ensembl:ENSMUSG00000037984 |
| **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** | Nex; Atoh2; Math2; Nex1m; Math-2; bHLHa2 |
| **Expression** | Biased expression in CNS E18 (RPKM 67.3), CNS E14 (RPKM 57.9) and 3 other tissues See more |
| **Orthologs** | human   all |

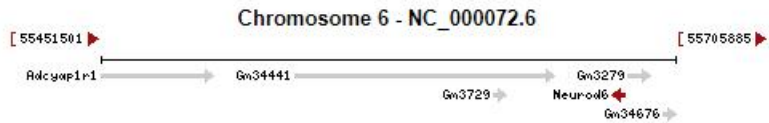## ▲ Genomic context

**Location:**   6 B3; 6 27.53 cM                                                      See Neurod6 in Genome Data Viewer

**Exon count:**   2

| Annotation release | Status | Assembly | Chr | Location |
|---|---|---|---|---|
| 108 | current | GRCm38.p6 (GCF_000001635.26) | 6 | NC_000072.6 (55677818..55681263, complement) |
| Build 37.2 | previous assembly | MGSCv37 (GCF_000001635.18) | 6 | NC_000072.5 (55627812..55631257, complement) |

### Chromosome 6 - NC_000072.6

[ 55451501 ▶                                                            [ 55705885 ▶

Adcyap1r1          Gm34441                    Gm3279
                              Gm3729          Neurod6 ◀
                                                   Gm34676 ⟶

# Transcript information（Ensembl）

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

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | | Flags | | |
|------|---------------|-----|---------|---------|------|---------|---|-------|---|---|
| Neurod6-201 | ENSMUST00000044767.9 | 2150 | 337aa | Protein coding | CCDS20168 | P48986 | Q5M8T7 | TSL:1 | GENCODE basic | APPRIS P1 |

The strategy is based on the design of *Neurod6-201* transcript,The transcription is shown below



< Neurod6-201
protein coding

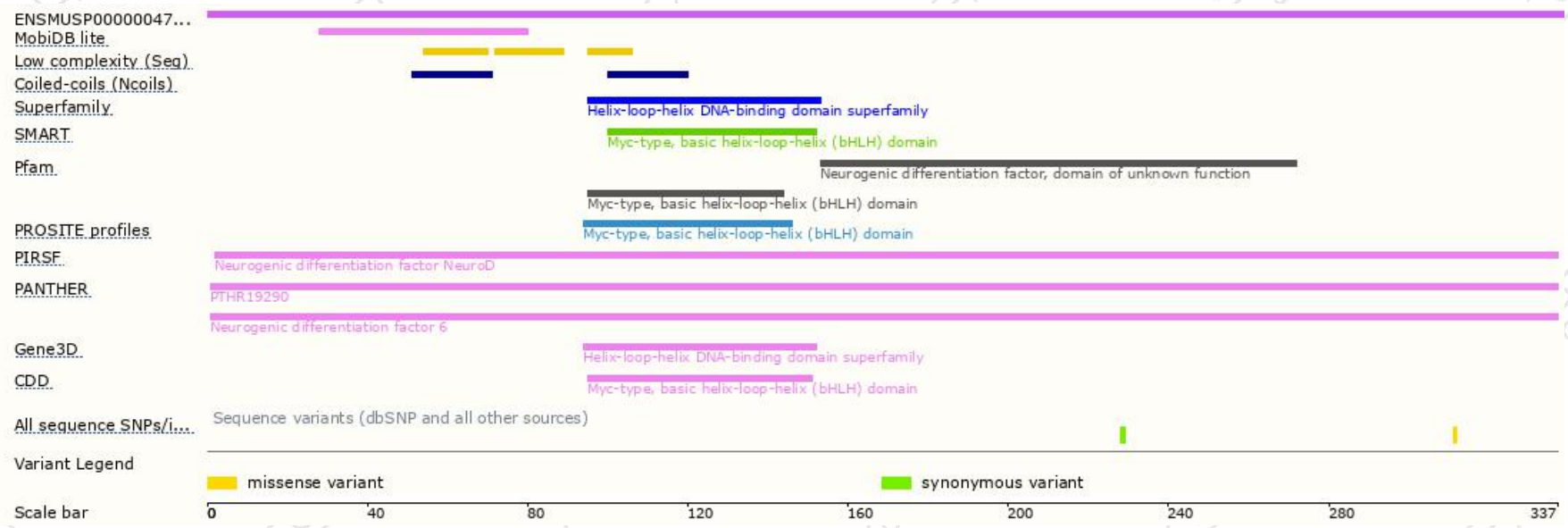◄ Reverse strand ———————————————— 3.44 kb ————————————————
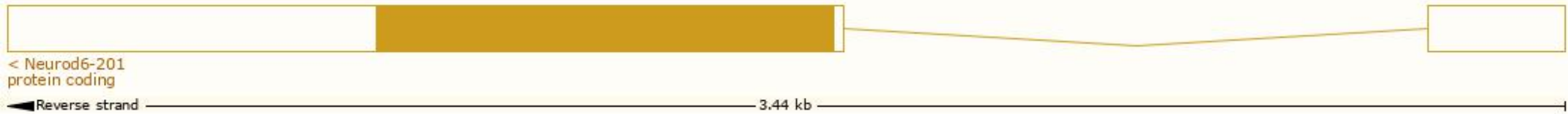
# Genomic location distribution
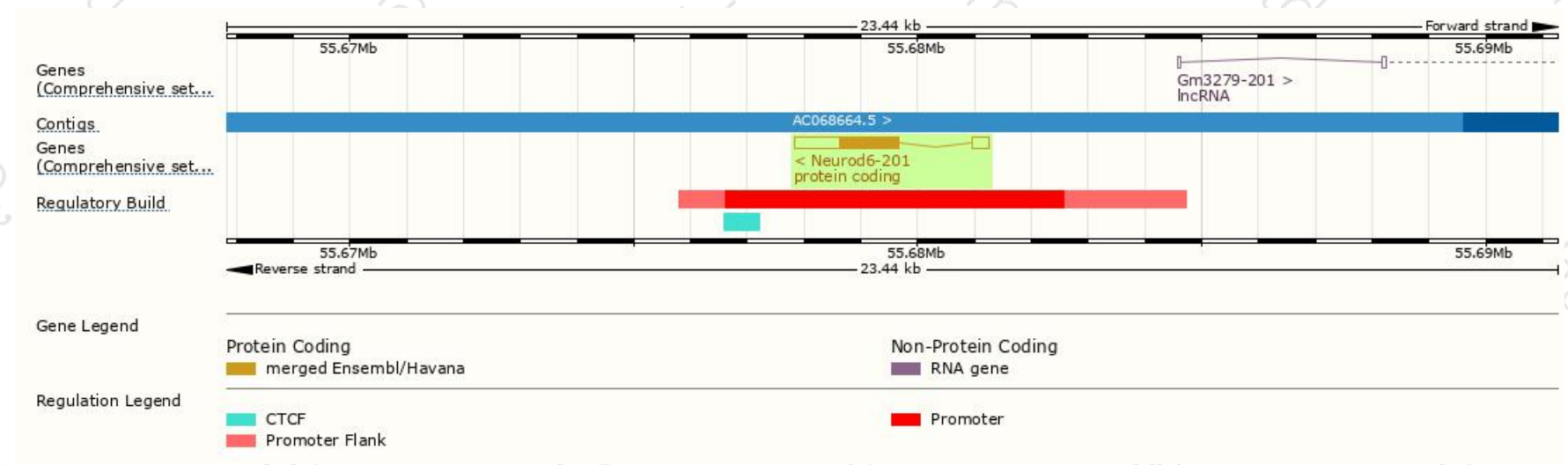
# Protein domain

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