

Fgf20 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Fgf20

Project type

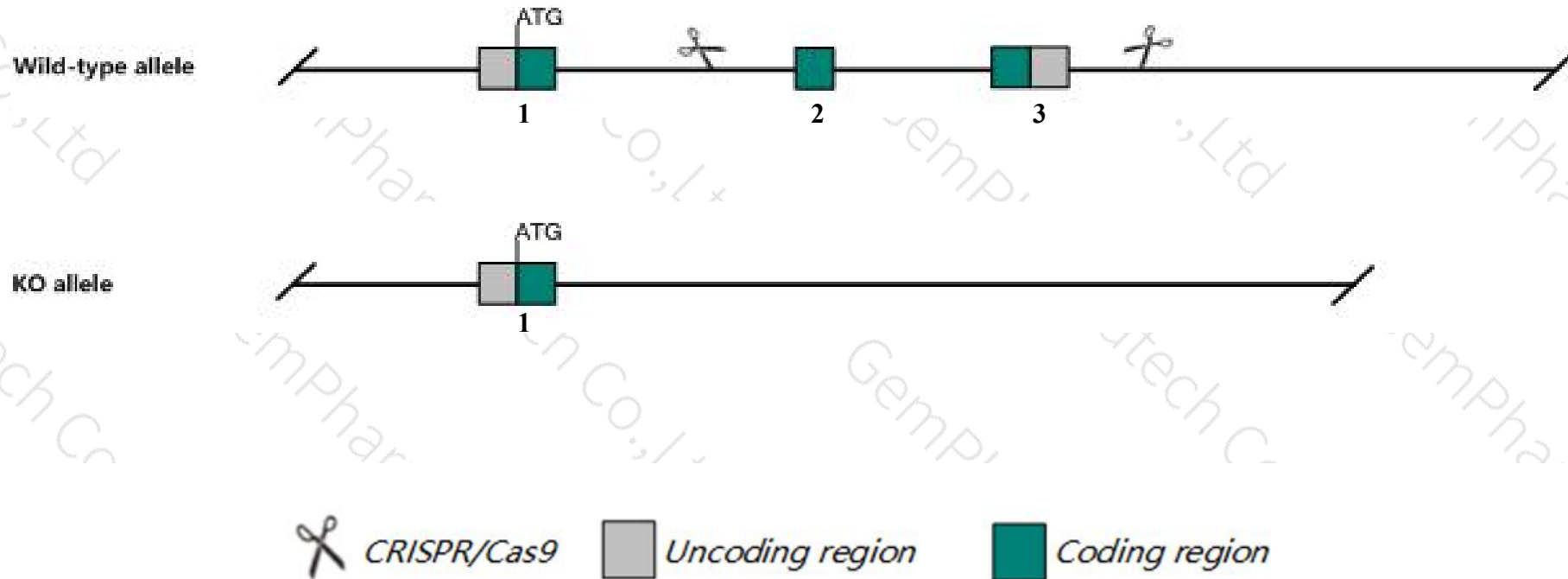
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fgf20* gene. The schematic diagram is as follows:



- The *Fgf20* gene has 2 transcripts. According to the structure of *Fgf20* gene, exon2-exon3 of *Fgf20-201* (ENSMUST00000034014.13) transcript is recommended as the knockout region. The region contains 350bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fgf20* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit impaired cochlear lateral compartment differentiation and deafness without loss of vestibular function.
- The *Fgf20* 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 gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Fgf20 fibroblast growth factor 20 [Mus musculus (house mouse)]

Gene ID: 80857, updated on 9-Apr-2019

Summary



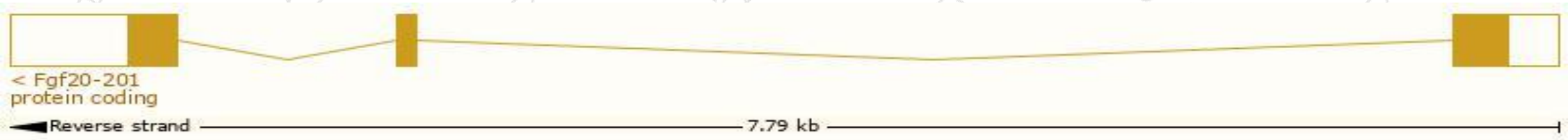
Official Symbol	Fgf20 provided by MGI
Official Full Name	fibroblast growth factor 20 provided by MGI
Primary source	MGI:MGI:1891346
See related	Ensembl:ENSMUSG000000031603
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

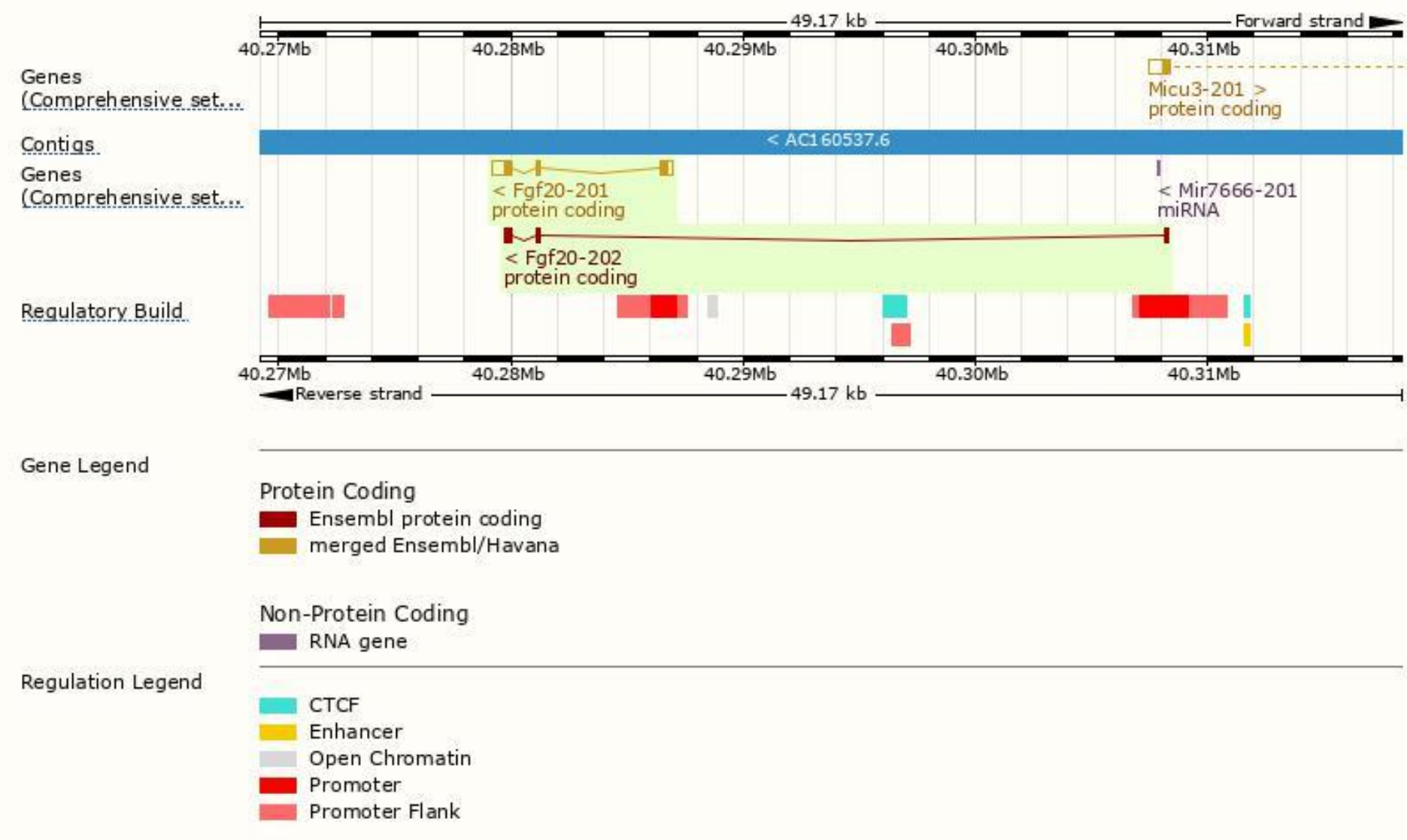
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fgf20-201	ENSMUST00000034014.13	1476	211aa	Protein coding	CCDS52544	Q9ESL9	TSL:1 GENCODE basic APPRIS P1
Fgf20-202	ENSMUST00000118639.1	587	157aa	Protein coding	-	D3YU10	TSL:3 GENCODE basic

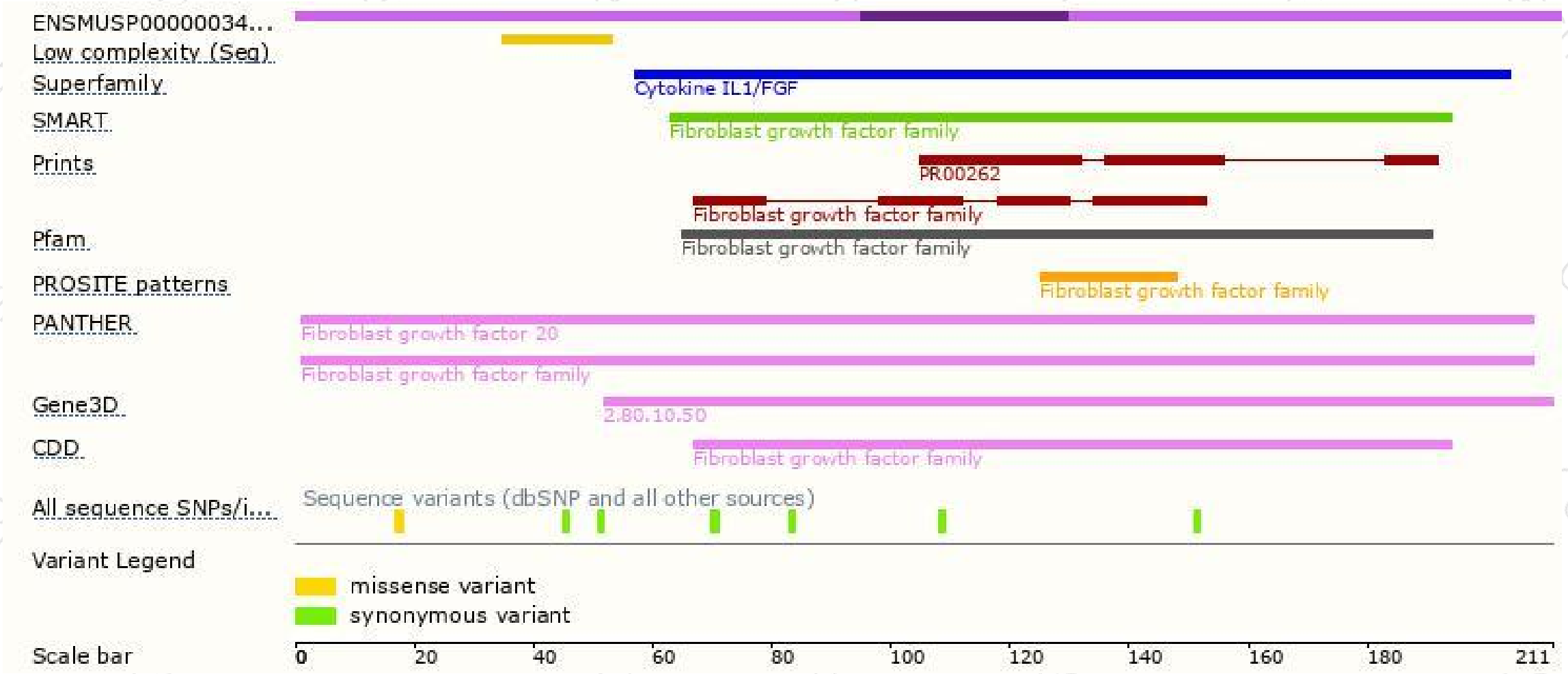
The strategy is based on the design of *Fgf20-201* transcript,The transcription is shown below



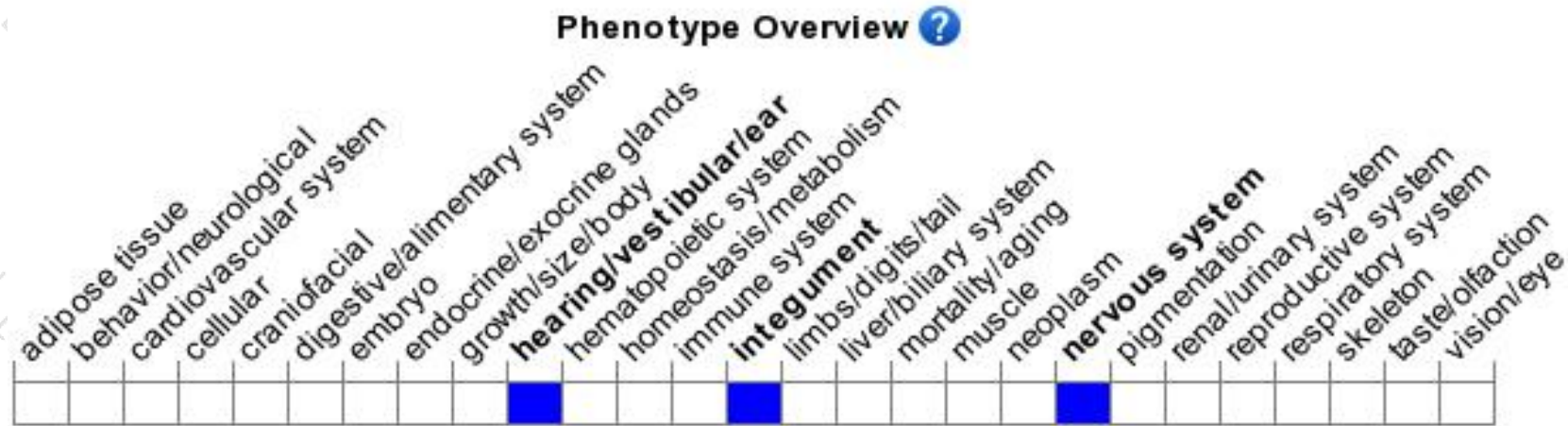
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a knock-out allele exhibit impaired cochlear lateral compartment differentiation and deafness without loss of vestibular function.

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

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