

***Nup37* Cas9-KO Strategy**

Designer: Ruirui Zhang

Reviewer: Huimin Su

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Project Overview

Project Name

Nup37

Project type

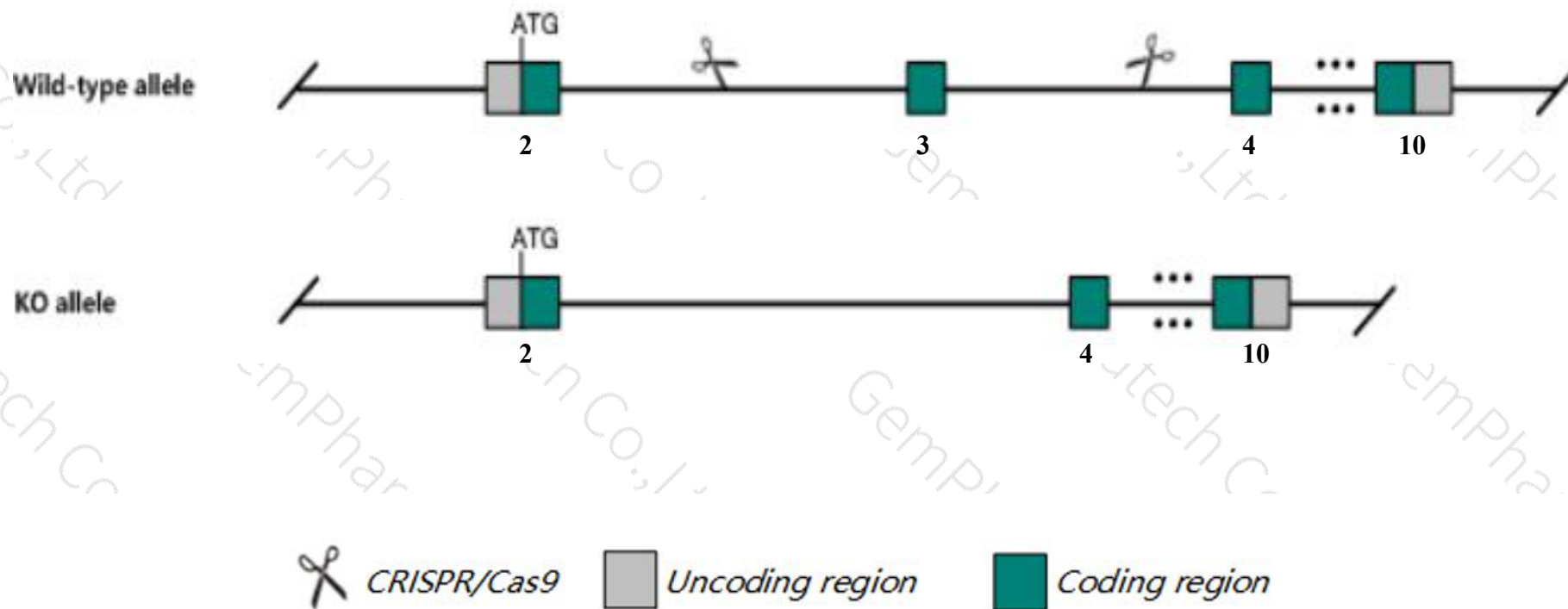
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Nup37* gene. The schematic diagram is as follows:



- The *Nup37* gene has 6 transcripts. According to the structure of *Nup37* gene, exon3 of *Nup37-202* (ENSMUST00000169309.2) transcript is recommended as the knockout region. The region contains 125bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Nup37* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Nup37* gene is located on the Chr10. 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)

Nup37 nucleoporin 37 [Mus musculus (house mouse)]

Gene ID: 69736, updated on 13-Mar-2020

Summary



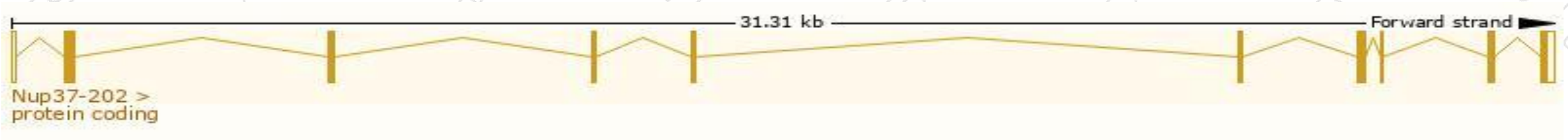
Official Symbol	Nup37 provided by MGI
Official Full Name	nucleoporin 37 provided by MGI
Primary source	MGI:MGI:1919964
See related	Ensembl:ENSMUSG00000035351
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410003L22Rik, 2810039M17Rik
Expression	Broad expression in CNS E11.5 (RPKM 13.9), placenta adult (RPKM 12.5) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

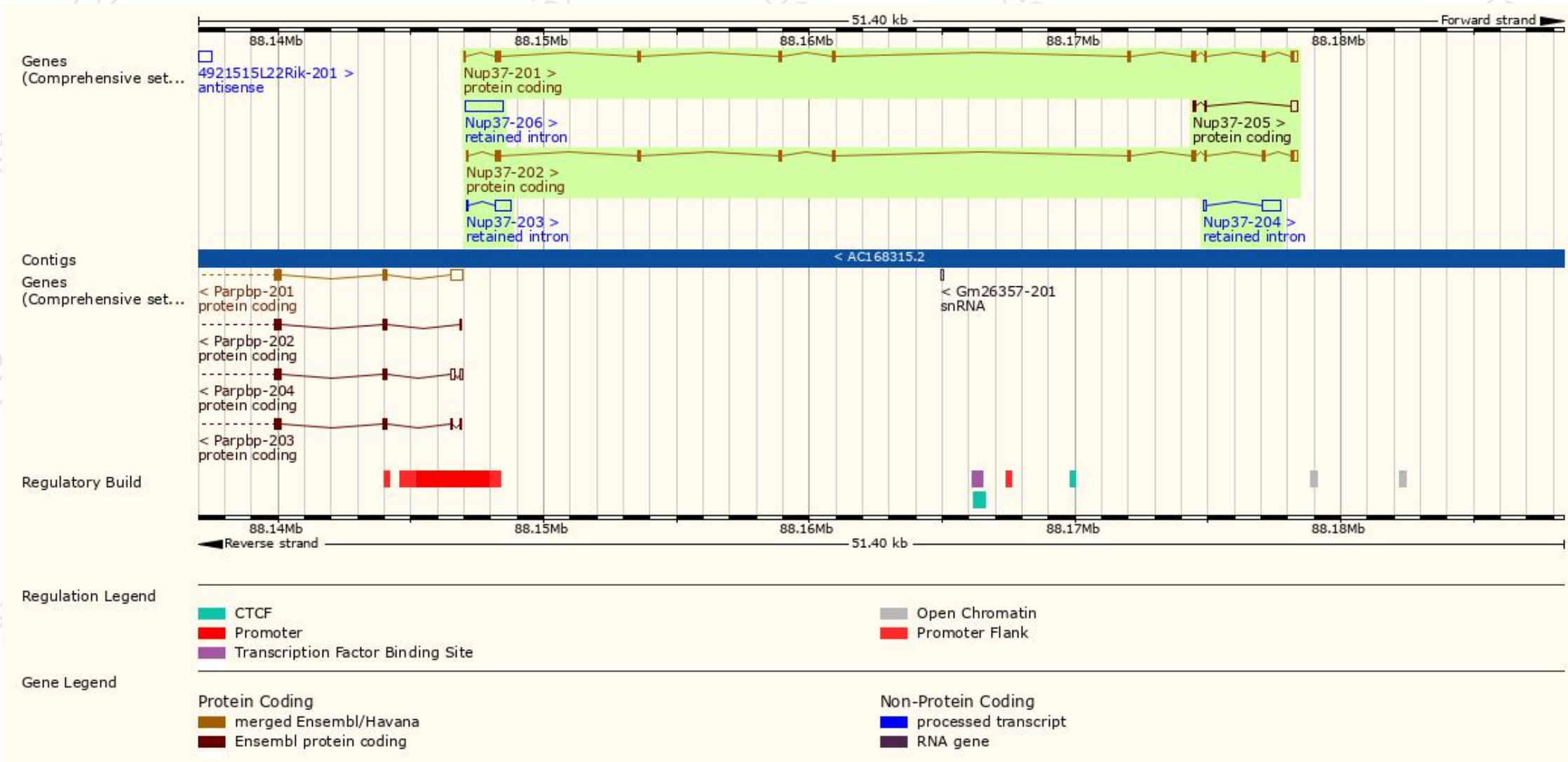
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nup37-202	ENSMUST00000169309.2	1277	326aa	Protein coding	CCDS24107	Q9CWU9	TSL:1 GENCODE basic APPRIS P1
Nup37-201	ENSMUST00000052355.14	1267	326aa	Protein coding	CCDS24107	Q9CWU9	TSL:1 GENCODE basic APPRIS P1
Nup37-205	ENSMUST00000219121.1	430	67aa	Protein coding	-	A0A1W2P6V2	CDS 5' incomplete TSL:3
Nup37-206	ENSMUST00000219859.1	1448	No protein	Retained intron	-	-	TSL:NA
Nup37-204	ENSMUST00000219059.1	721	No protein	Retained intron	-	-	TSL:2
Nup37-203	ENSMUST00000218935.1	679	No protein	Retained intron	-	-	TSL:2

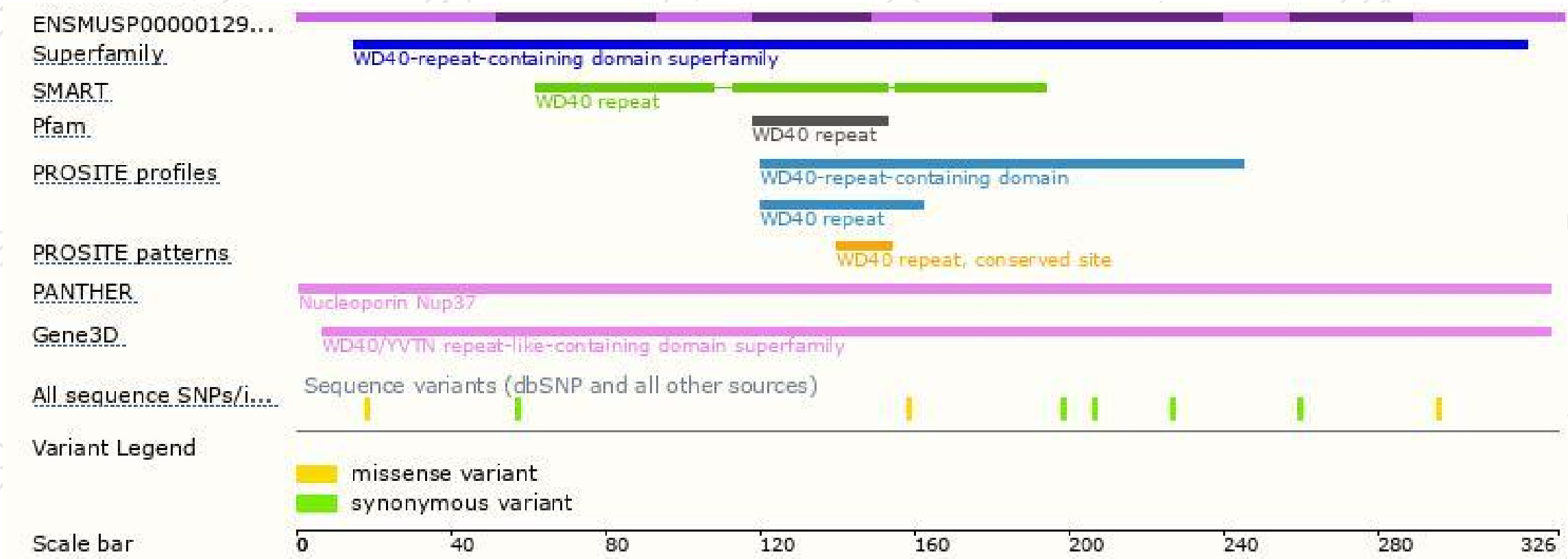
The strategy is based on the design of *Nup37-202* transcript,the transcription is shown below:



Genomic location distribution

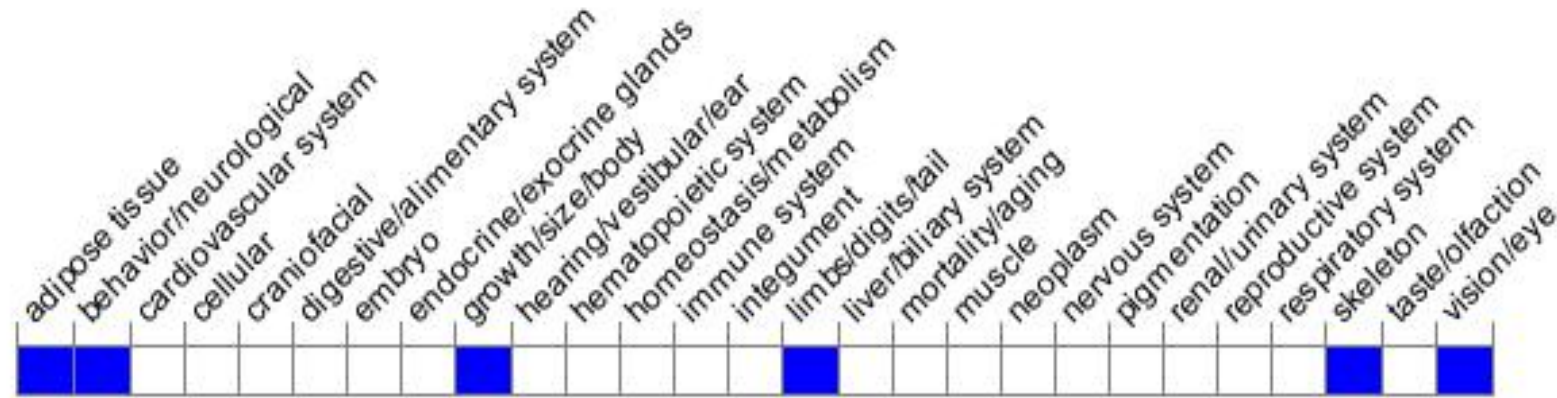


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

Tel: 400-9660890

