Snx8 Cas9-CKO Strategy

Designer: Rui Xiong

Reviewer: Longyun Hu

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Project Overview

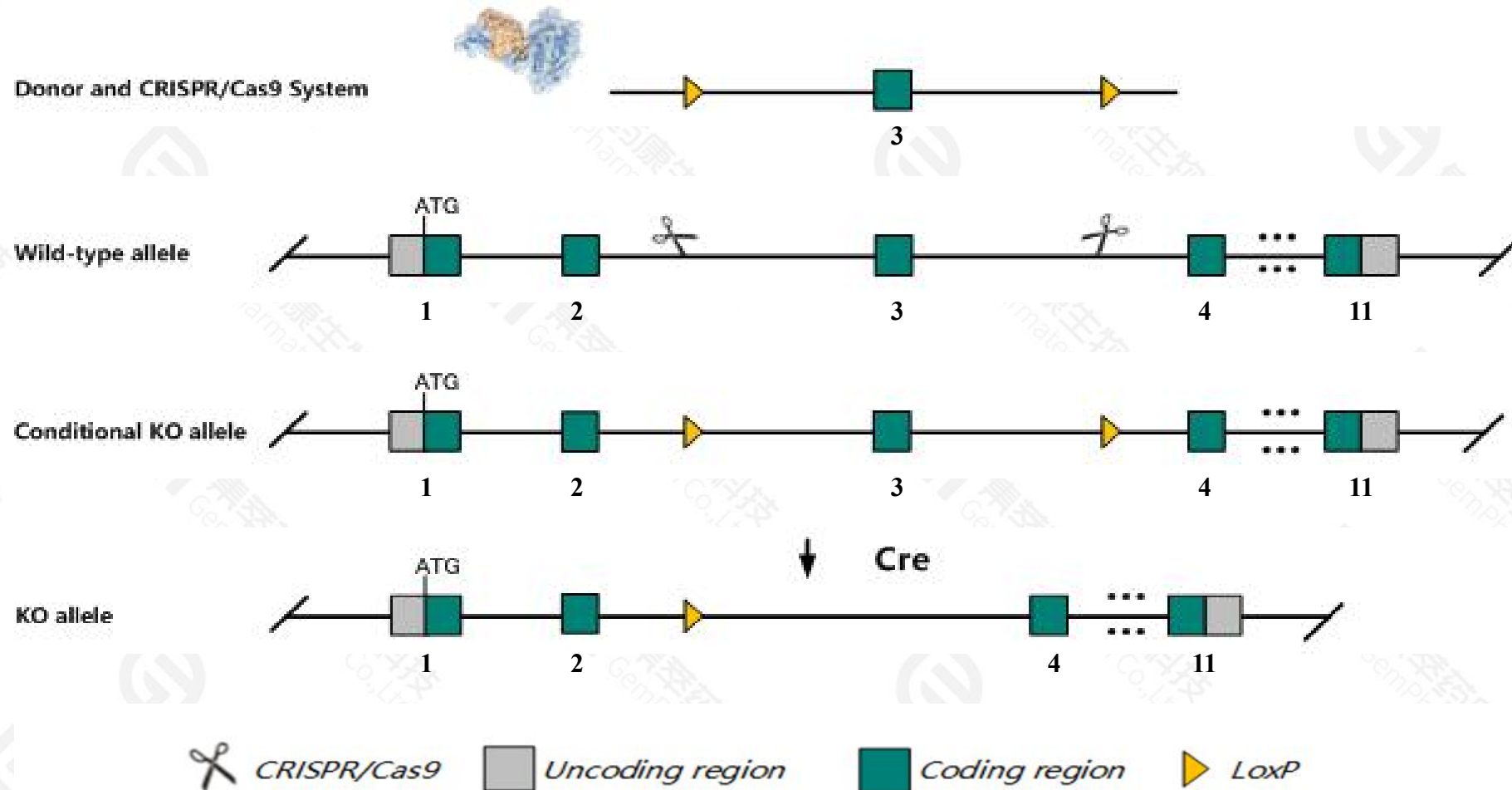|	
Project Name	*Snx8*
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Snx8* gene. The schematic diagram is as follows:

Technical routes

➤ The *Snx8* gene has 7 transcripts. According to the structure of *Snx8* gene, exon3 of *Snx8-201*(ENSMUST00000031539.12) transcript is recommended as the knockout region. The region contains 118bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Snx8* gene. The brief process is as follows:CRISPR/Cas9 system 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 will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

➢ The *Snx8* gene is located on the Chr5. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information （NCBI）

Snx8 sorting nexin 8 [Mus musculus (house mouse)]
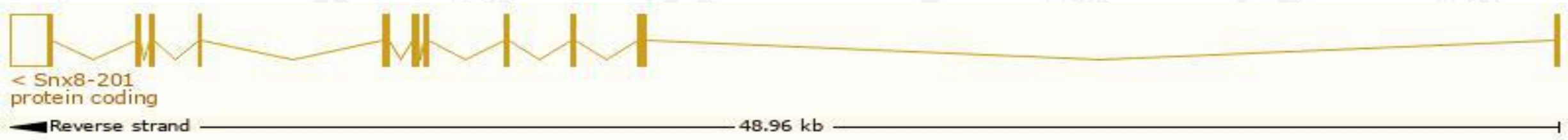
Gene ID: 231834, updated on 17-Dec-2020

▲ Summary

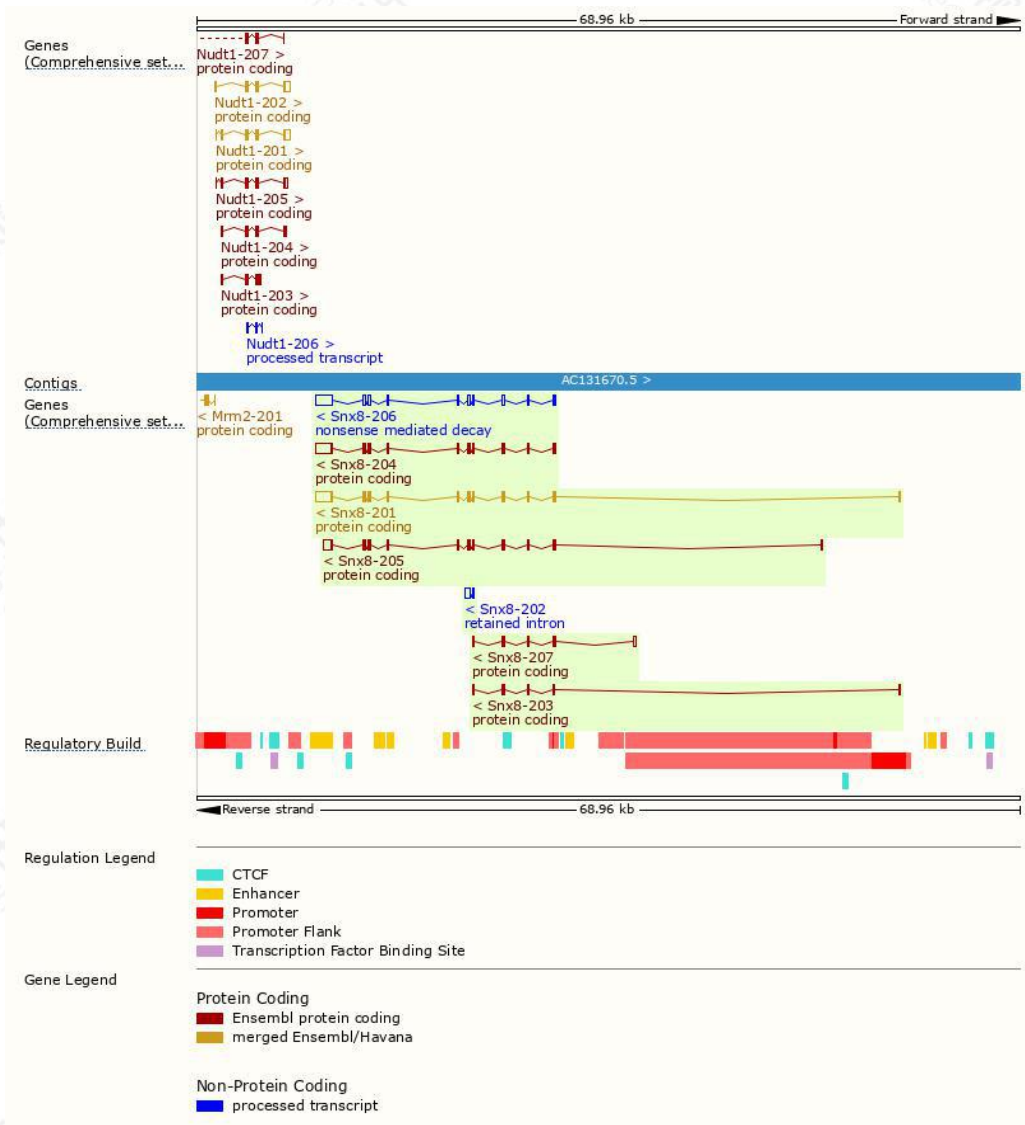|	
Official Symbol	Snx8 provided by MGI
Official Full Name	sorting nexin 8 provided by MGI
Primary source	MGI:MGI:2443816
See related	Ensembl:ENSMUSG00000029560
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	B130023O14Rik
Expression	Ubiquitous expression in kidney adult (RPKM 15.1), spleen adult (RPKM 10.6) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Snx8-201	ENSMUST00000031539.12	2627	459aa	Protein coding	CCDS39356		TSL:1 , GENCODE basic ,
Snx8-204	ENSMUST00000196130.5	2547	411aa	Protein coding	-		TSL:1 , GENCODE basic , APPRIS P1 ,
Snx8-205	ENSMUST00000196566.5	1914	411aa	Protein coding	-		TSL:5 , GENCODE basic , APPRIS P1 ,
Snx8-207	ENSMUST00000198945.5	687	176aa	Protein coding	-		CDS 3' incomplete , TSL:5 ,
Snx8-203	ENSMUST00000196020.2	493	75aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Snx8-206	ENSMUST00000197880.5	2590	88aa	Nonsense mediated decay	-		TSL:2 ,
Snx8-202	ENSMUST00000195982.2	522	No protein	Retained intron	-		TSL:3 ,

The strategy is based on the design of *Snx8-201* transcript,the transcription is shown below:

< Snx8-201
protein coding

◀ Reverse strand

48.96 kb

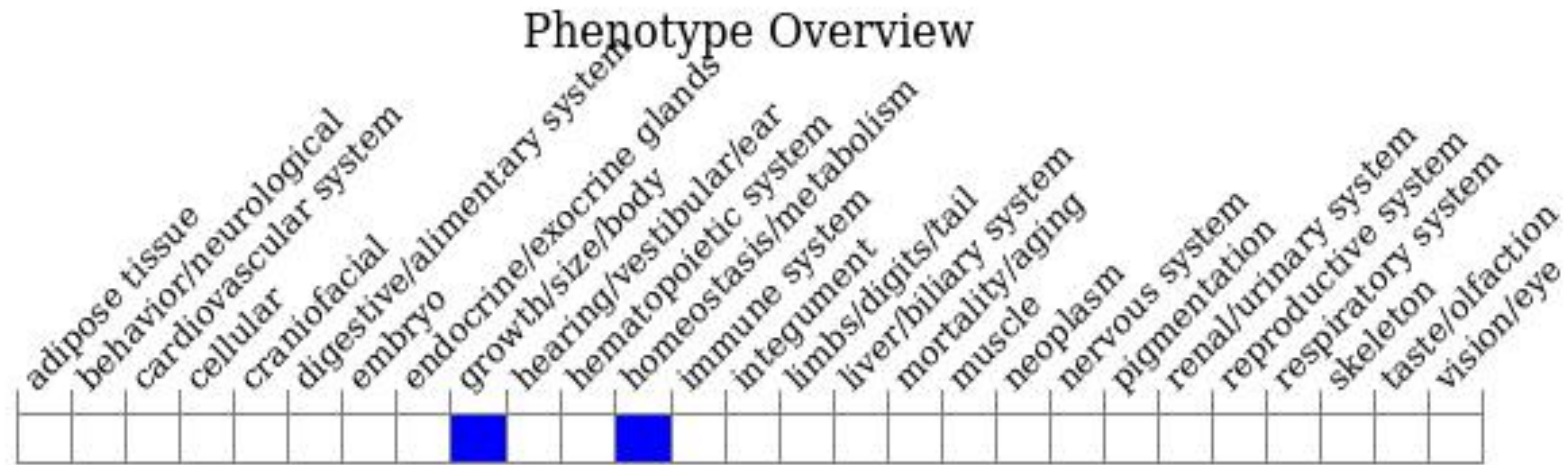江苏集萃药康生物科技股份有限公司　　GemPharmatech Co., Ltd.　　400-9660890

Genomic location distribution

Protein domain
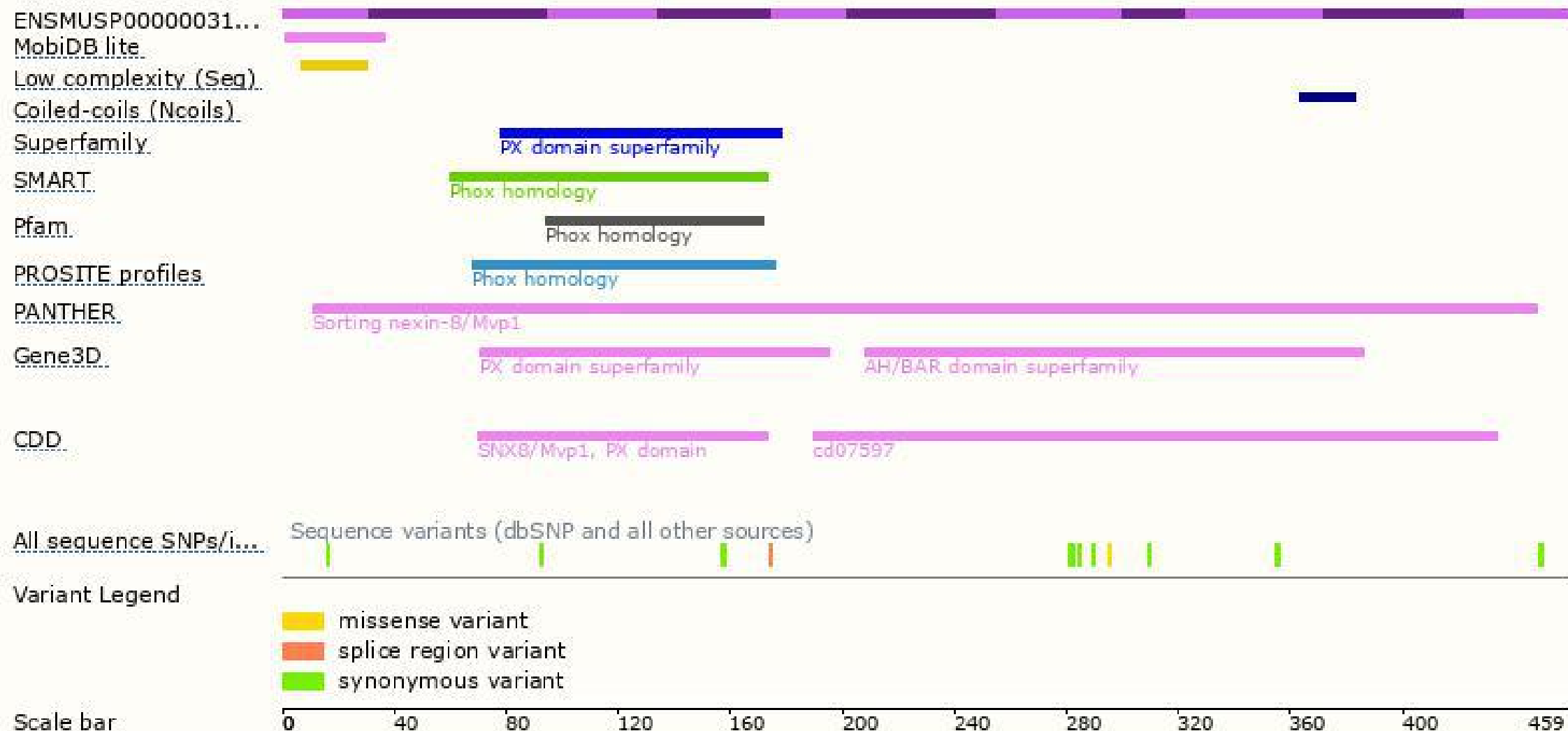
Mouse phenotype description(MGI)

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

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If you have any questions, you are welcome to inquire.
Tel: 400-9660890

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