

Lypd6 Cas9-CKO Strategy

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Project Overview

Project Name

Lypd6

Project type

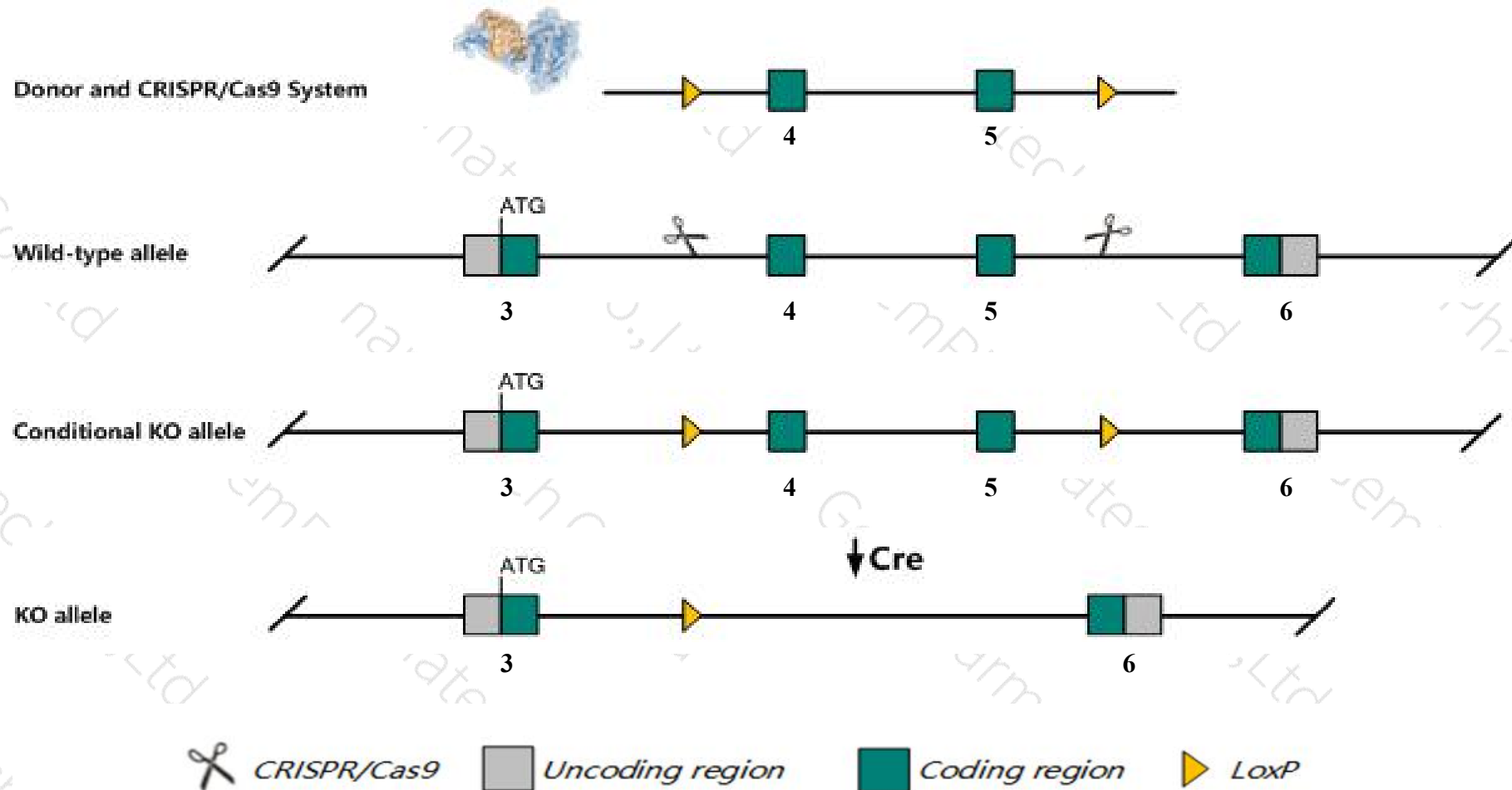
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lypd6* gene. The schematic diagram is as follows:



- The *Lypd6* gene has 5 transcripts. According to the structure of *Lypd6* gene, exon4-exon5 of *Lypd6*-201(ENSMUST00000053208.13) transcript is recommended as the knockout region. The region contains 230bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lypd6* 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.

- The *Lypd6* gene is located on the Chr2. 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.
- Transcript 203,204 CDS 3' incomplete the influences is unknown.
- 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)

Lypd6 LY6/PLAUR domain containing 6 [Mus musculus (house mouse)]

Gene ID: 320343, updated on 13-Mar-2020

Summary



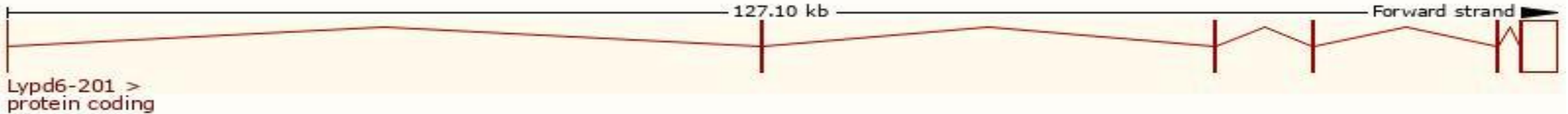
Official Symbol	Lypd6 provided by MGI
Official Full Name	LY6/PLAUR domain containing 6 provided by MGI
Primary source	MGI:MGI:2443848
See related	Ensembl:ENSMUSG00000050447
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	E130115E03Rik
Expression	Broad expression in adrenal adult (RPKM 4.3), cortex adult (RPKM 3.4) and 17 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

The gene has 5 transcripts,all transcripts are shown below:

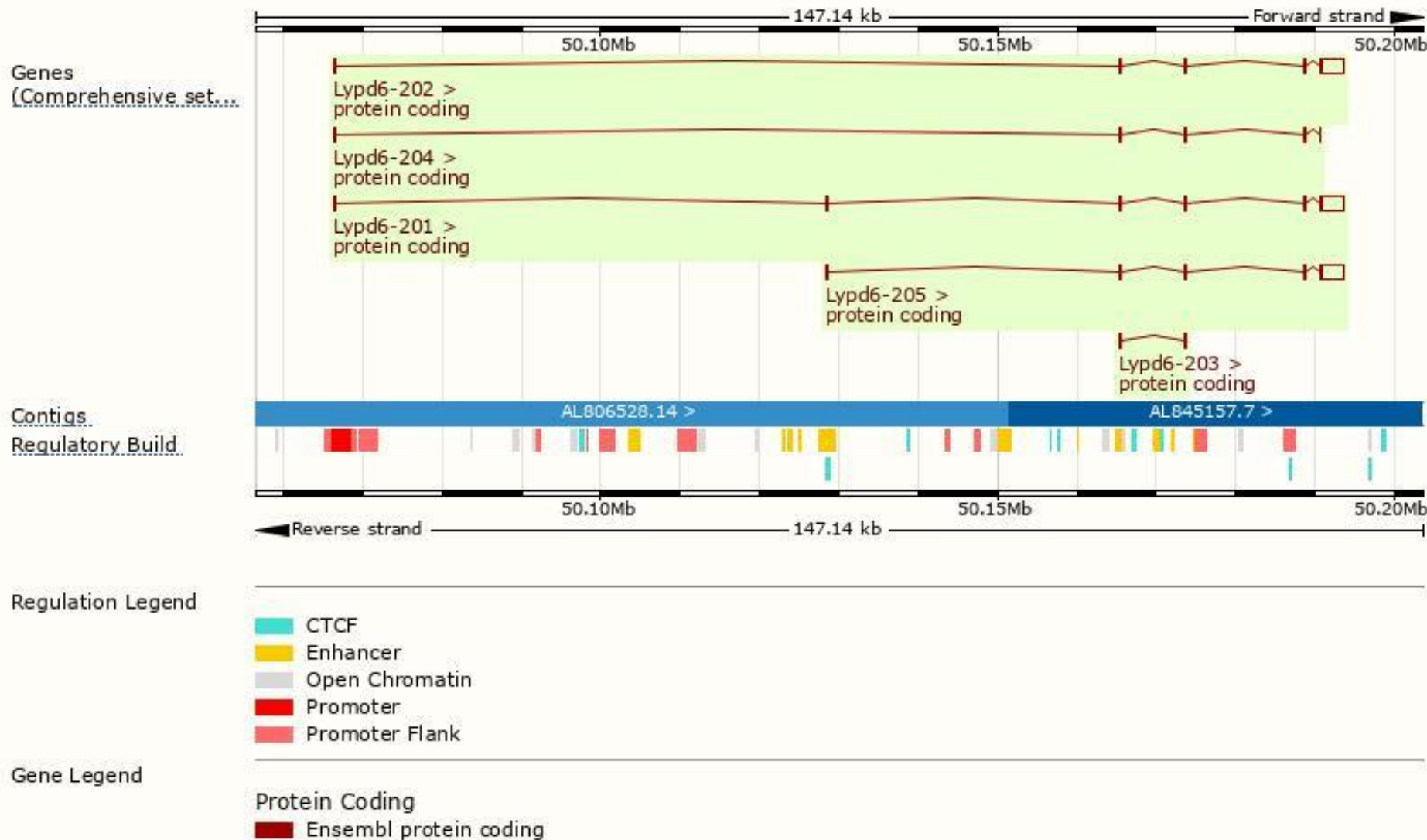
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lypd6-201	ENSMUST00000053208.13	3620	171aa	Protein coding	CCDS16026	Q8BPP5	TSL:1 GENCODE basic APPRIS P1
Lypd6-205	ENSMUST00000169232.1	3499	171aa	Protein coding	CCDS16026	Q8BPP5	TSL:1 GENCODE basic APPRIS P1
Lypd6-202	ENSMUST00000112712.9	3495	171aa	Protein coding	CCDS16026	Q8BPP5	TSL:5 GENCODE basic APPRIS P1
Lypd6-204	ENSMUST00000128451.7	563	123aa	Protein coding	-	A2AQT4	CDS 3' incomplete TSL:5
Lypd6-203	ENSMUST00000126337.1	351	70aa	Protein coding	-	A2AQT3	CDS 3' incomplete TSL:2

The strategy is based on the design of *Lypd6-201* transcript,the transcription is shown below:

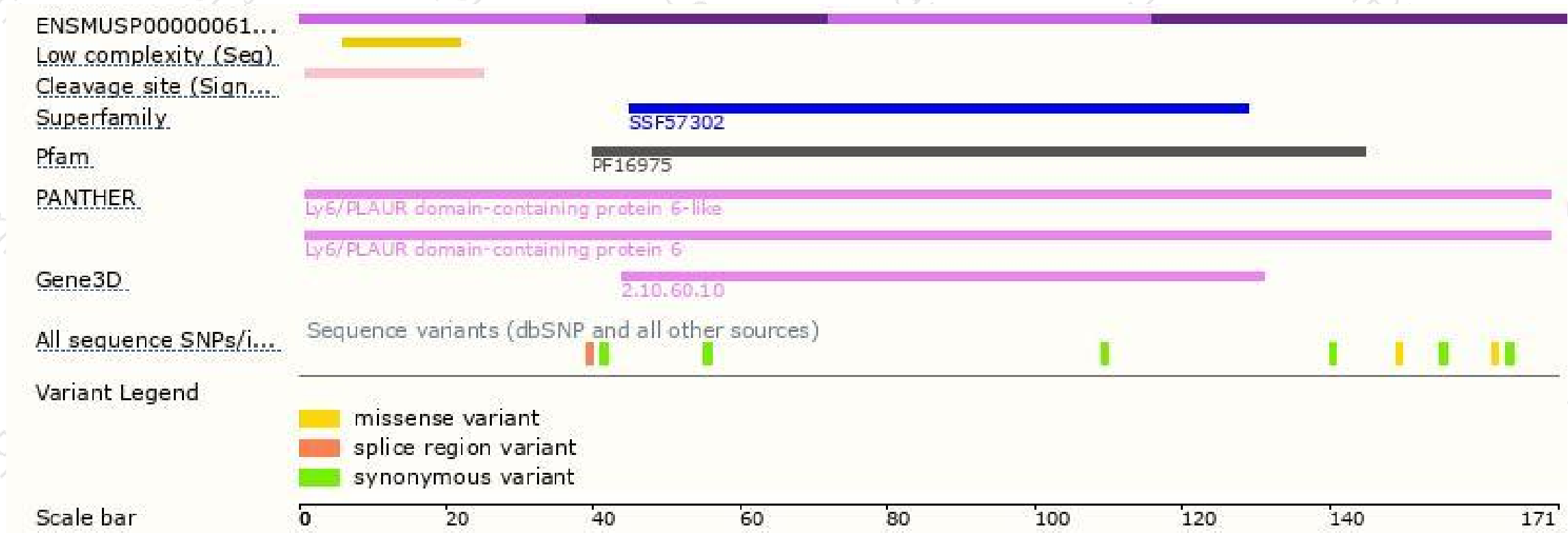




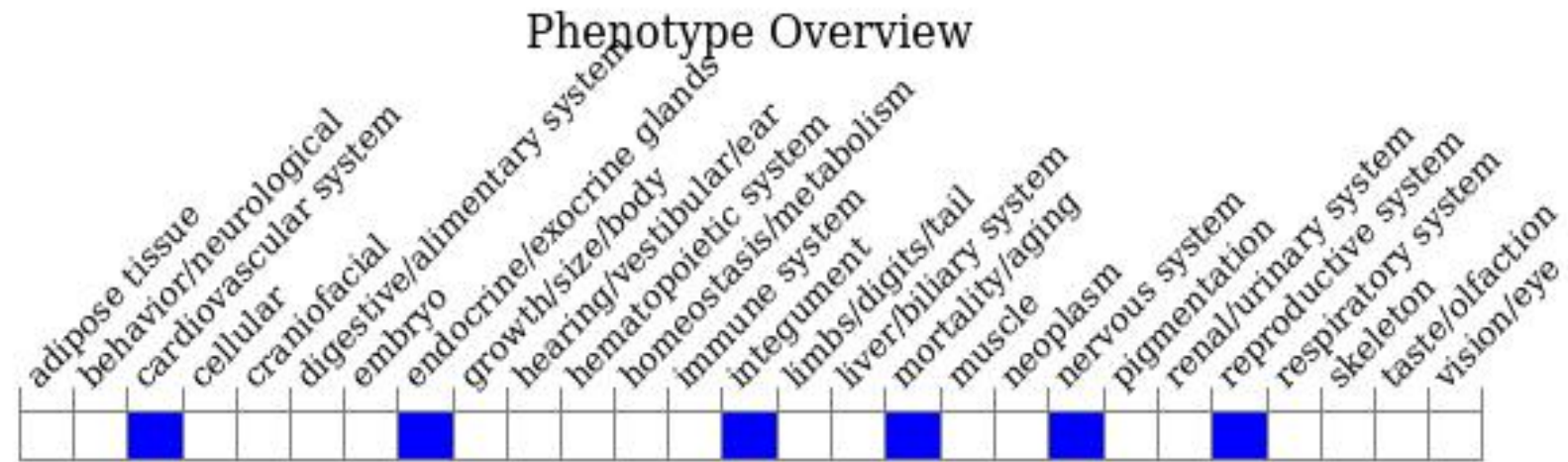
Genomic location distribution



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/>).

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

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