Angptl6 Cas9-KO Strategy

Designer: Daohua Xu
Reviewer: Huimin Su

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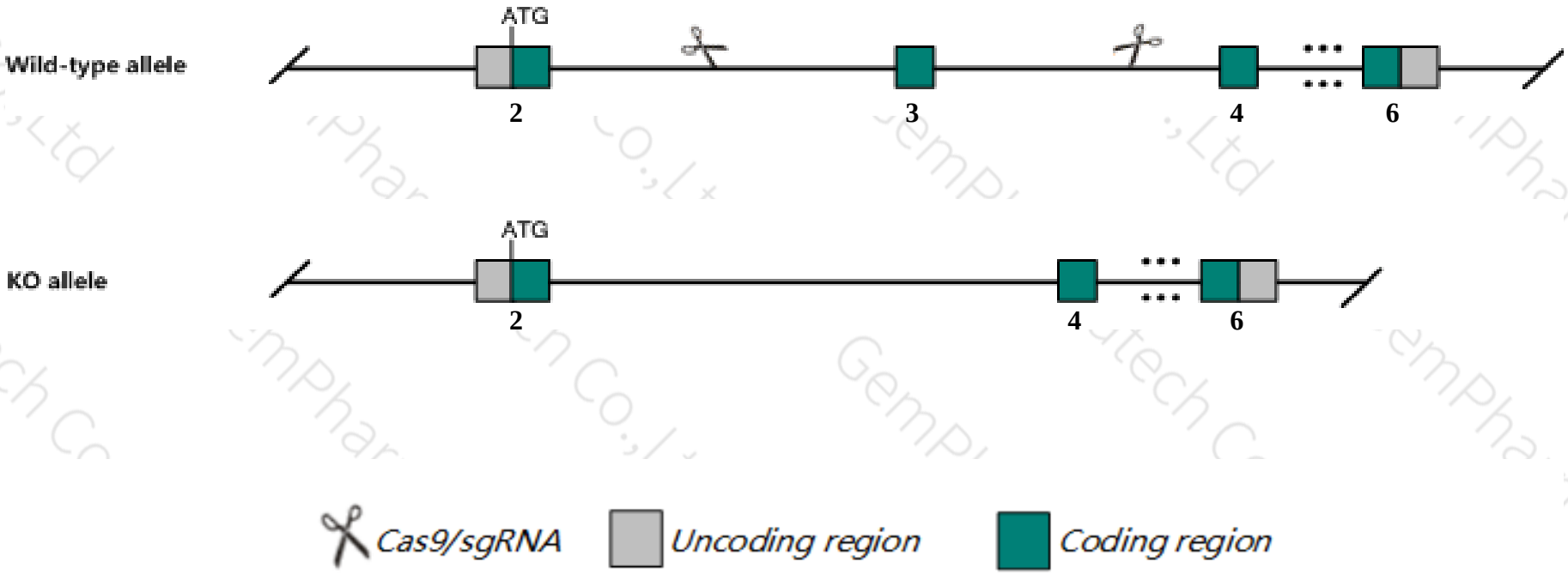
Project Overview

Project Name	***Angptl6***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Angptl6* gene. The schematic diagram is as follows:



Technical routes

➢ The *Angptl6* gene has 1 transcript. According to the structure of *Angptl6* gene, exon3 of *Angptl6-201* (ENSMUST00000043726.7) transcript is recommended as the knockout region.The region contains 178bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Angptl6* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA 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.

Notice

- According to the existing MGI data,Most mice homozygous for a knock-out allele die around E13 with cardiovascular defects; survivors develop obesity, lipid accumulation in skeletal muscle and liver, hyperglycemia and hyperinsulinemia, and insulin resistance accompanied by reduced energy expenditure and whole-body oxygen consumption.

- The *Angptl6* gene is located on the Chr9. 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）

集萃药康 GemPharmatech

Angptl6 angiopoietin-like 6 [Mus musculus (house mouse)]

Gene ID: 70726, updated on 31-Jan-2019

Summary

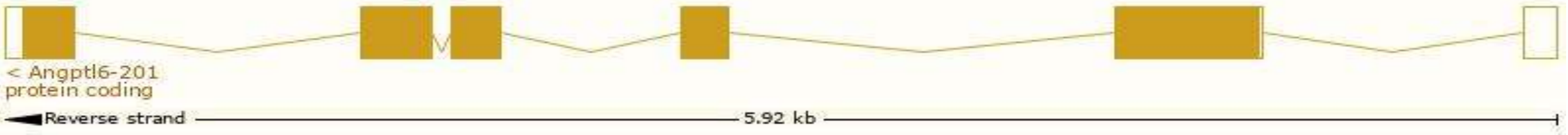
Official Symbol	Angptl6 provided by MGI
Official Full Name	angiopoietin-like 6 provided byMGI
Primary source	MGI:MGI:1917976
See related	Ensembl:ENSMUSG00000038742
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	6330404E11Rik, AGF, ARP3, Arp5
Expression	Ubiquitous expression in liver adult (RPKM 15.9), placenta adult (RPKM 7.6) and 27 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

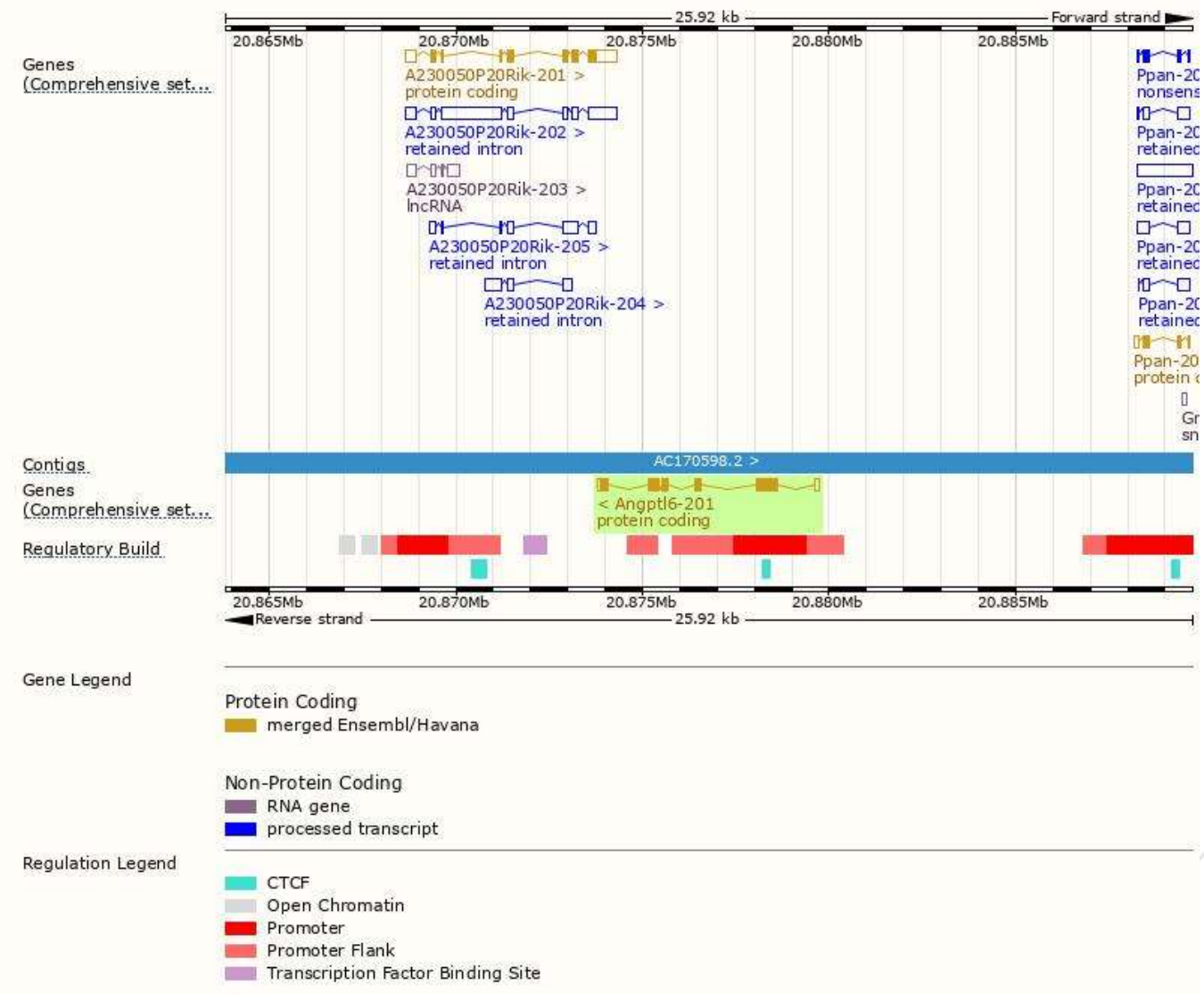
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Angptl6-201	ENSMUST00000043726.7	1582	457aa	Protein coding	CCDS22886	Q8R0Z6	TSL:1 GENCODE basic APPRIS P1

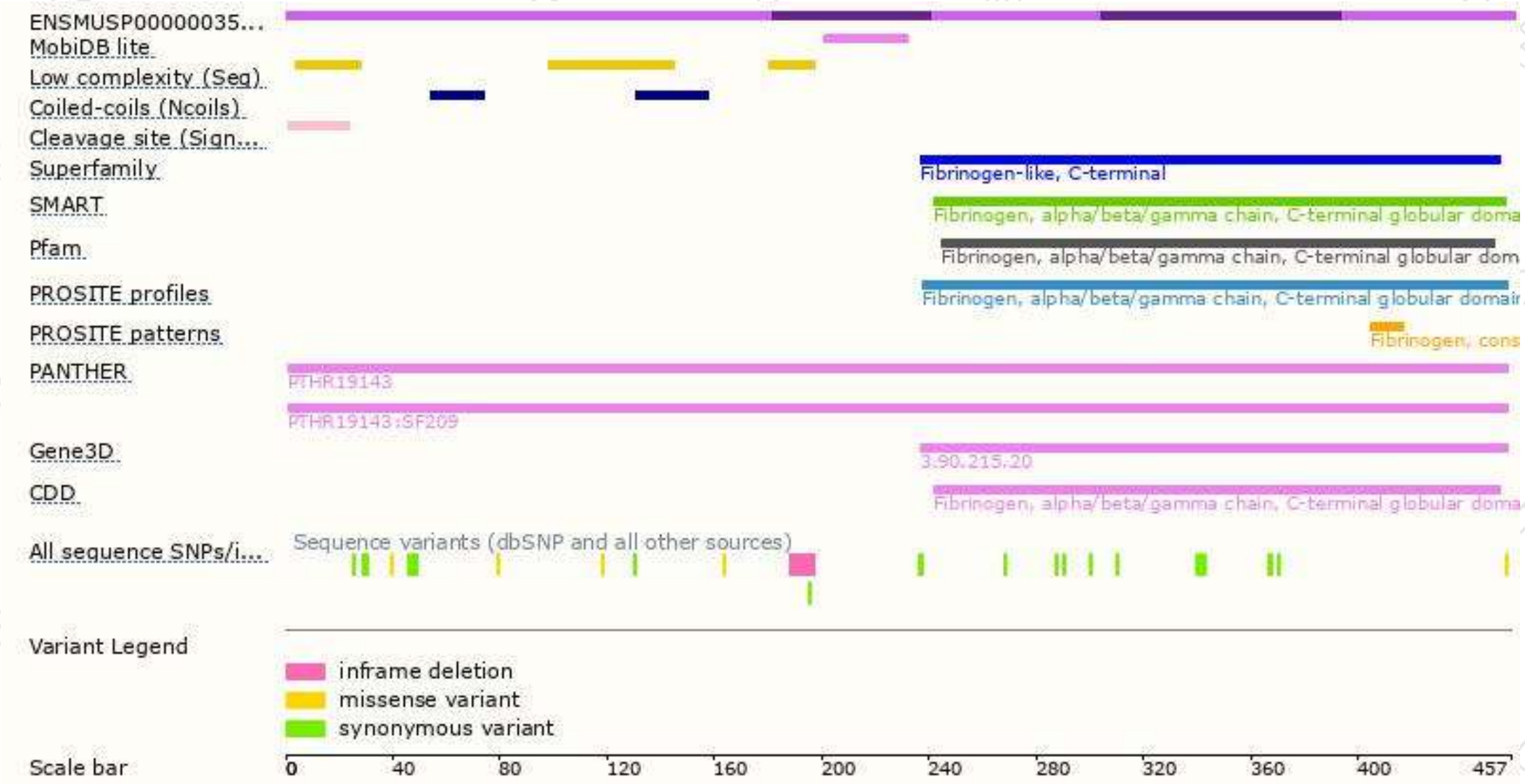
The strategy is based on the design of *Angptl6-201* transcript,The transcription is shown below



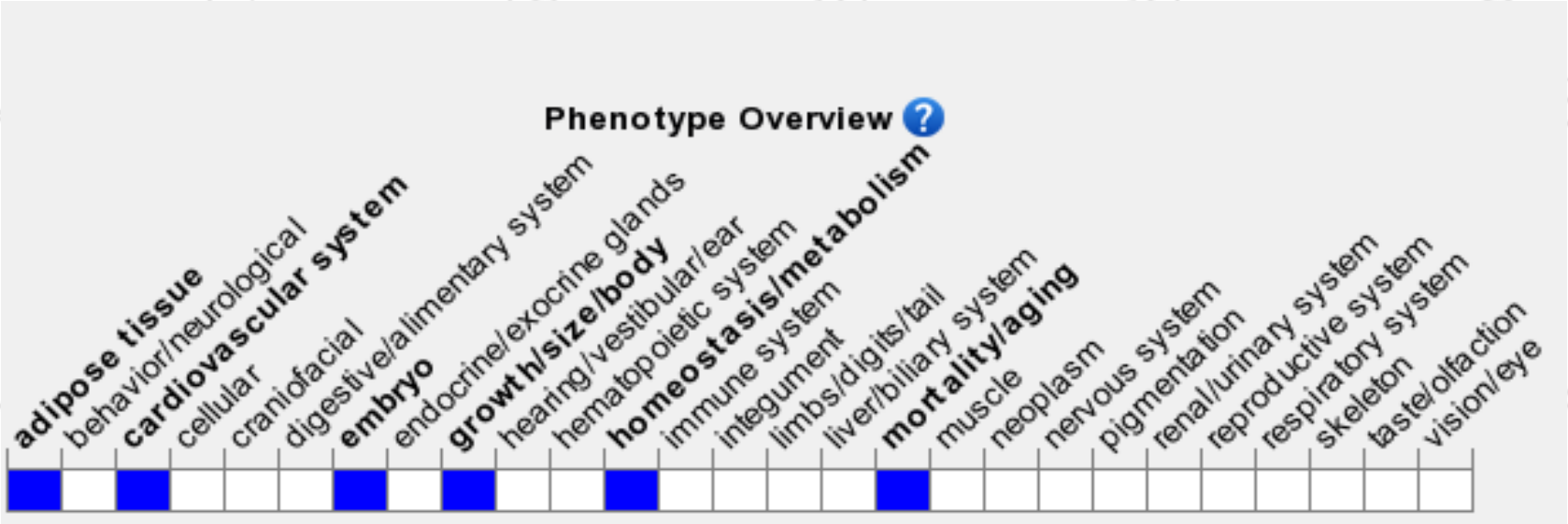
Genomic location distribution



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/).

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集萃药康
GemPharmatech

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

Tel: 025-5864 1534

集萃药康生物科技
GemPharmatech Co.,Ltd