Flnb Cas9-KO Strategy

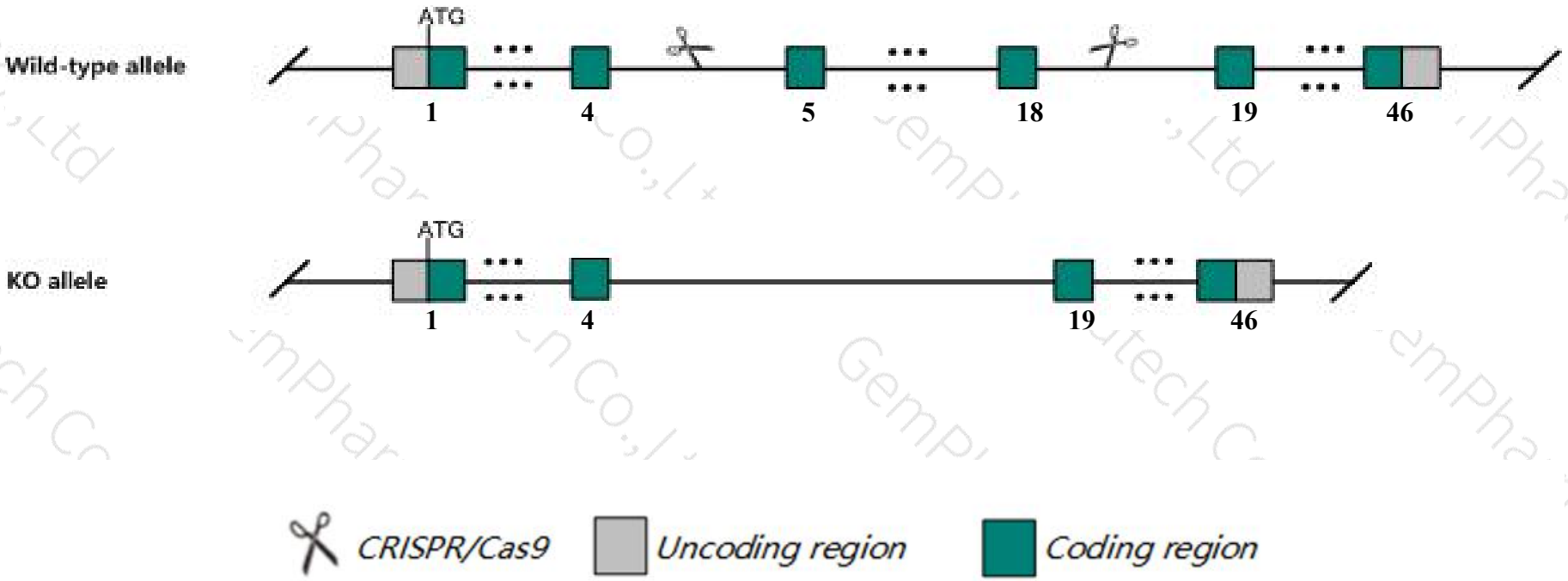
Designer: Shilei Zhu

Project Overview

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

Knockout strategy

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



Technical routes

➢ The *Flnb* gene has 2 transcripts. According to the structure of *Flnb* gene, exon5-exon18 of *Flnb-201* (ENSMUST00000052678.8) transcript is recommended as the knockout region.The region contains 1958bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Flnb* gene. The brief process is as follows: CRISPR/Cas9 system v

Notice

- According to the existing MGI data,Mutations in this gene cause skeletal defects including runting, premature mineralization, and bone fusion. Nullizygous mice show a delay and reduction in long bone growth. Truncation mutations cause early fusion of spinal vertebrae due to enhanced chondrocyte hypertrophy and early differentiation.

- The *Flnb* gene is located on the Chr14. 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

Flnb filamin, beta [Mus musculus (house mouse)]

Gene ID: 286940, updated on 31-Jan-2019

Summary

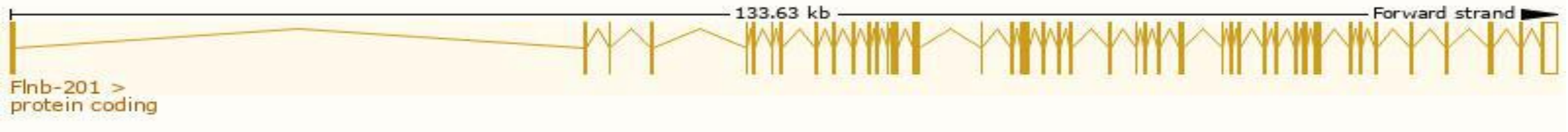
Official Symbol	Flnb provided by MGI
Official Full Name	filamin, beta provided by MGI
Primary source	MGI:MGI:2446089
See related	Ensembl:ENSMUSG00000025278
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AL024016, Fln-b
Expression	Ubiquitous expression in colon adult (RPKM 35.6), placenta adult (RPKM 32.0) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

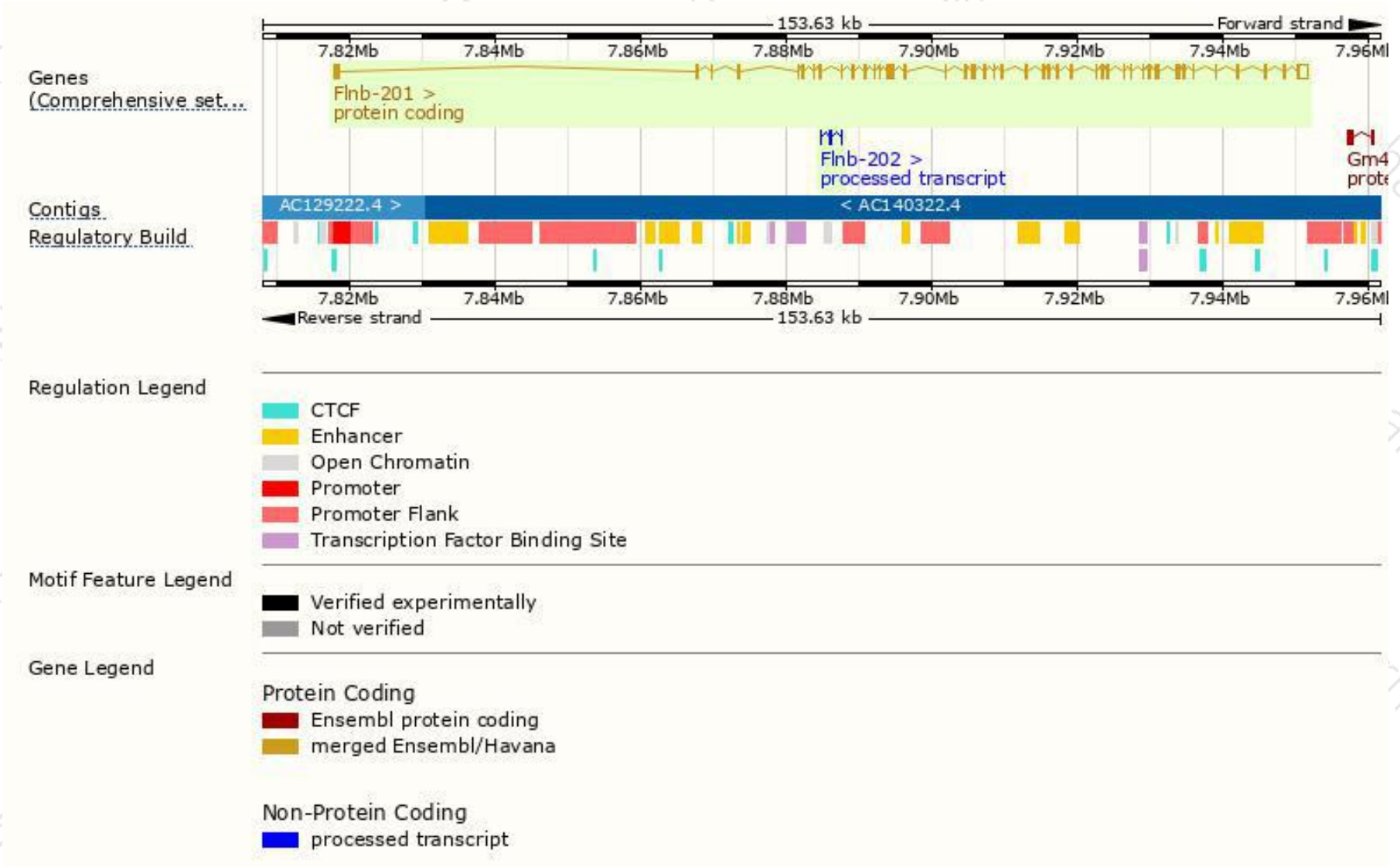
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Flnb-201	ENSMUST00000052678.8	9100	2602aa	Protein coding	CCDS70540	Q80X90	TSL:5 GENCODE basic APPRIS P1
Flnb-202	ENSMUST00000228206.1	111	No protein	Processed transcript	-	-	

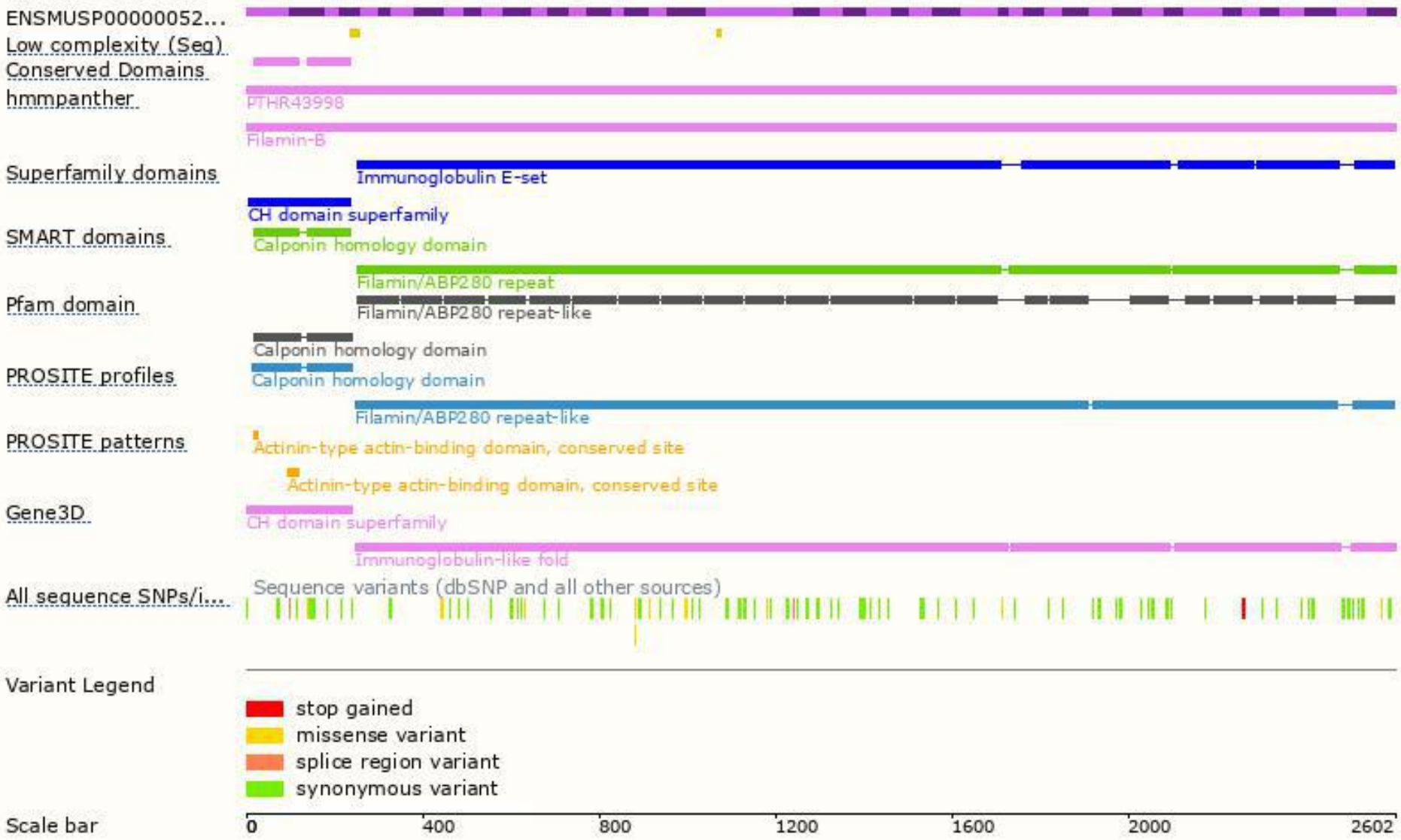
The strategy is based on the design of *Flnb-201* transcript,The transcription is shown below



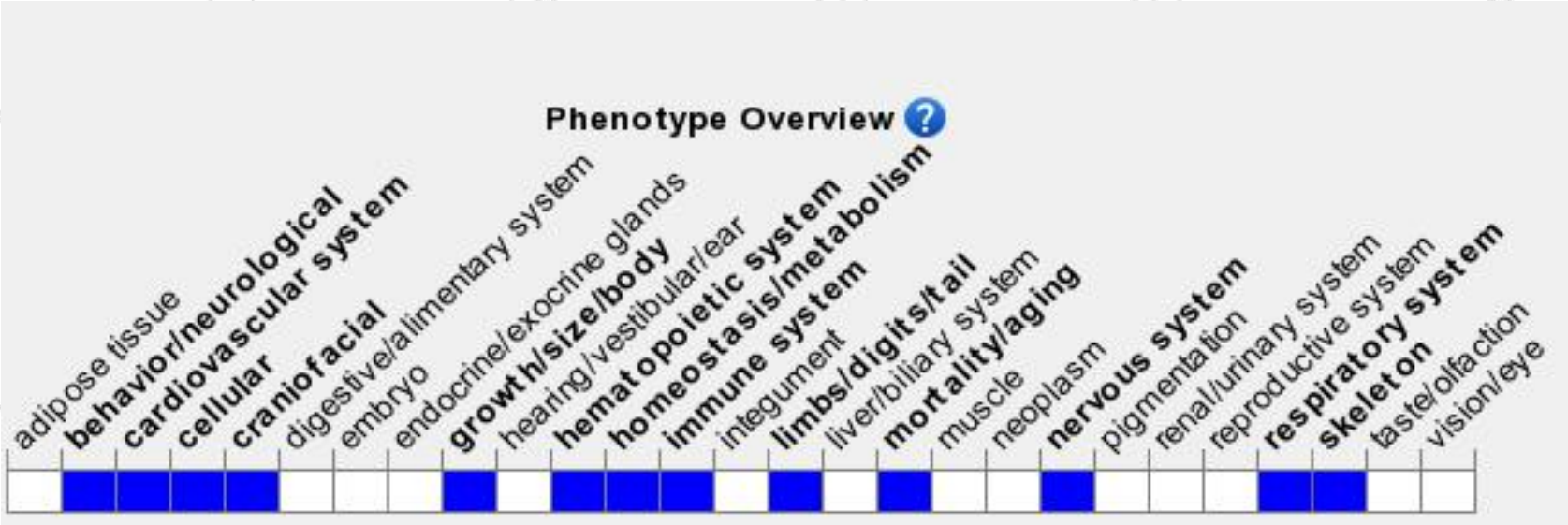
Genomic location distribution



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,Mutations in this gene cause skeletal defects including runting, premature mineralization, and bone fusion. Nullizygous mice show a delay and reduction in long bone growth. Truncation mutations cau early fusion of spinal vertebrae due to enhanced chondrocyte hypertrophy and early differentiation.

集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd