Rpl26 Cas9-CKO Strategy

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Design Date: **2020-3-31**

Project Overview

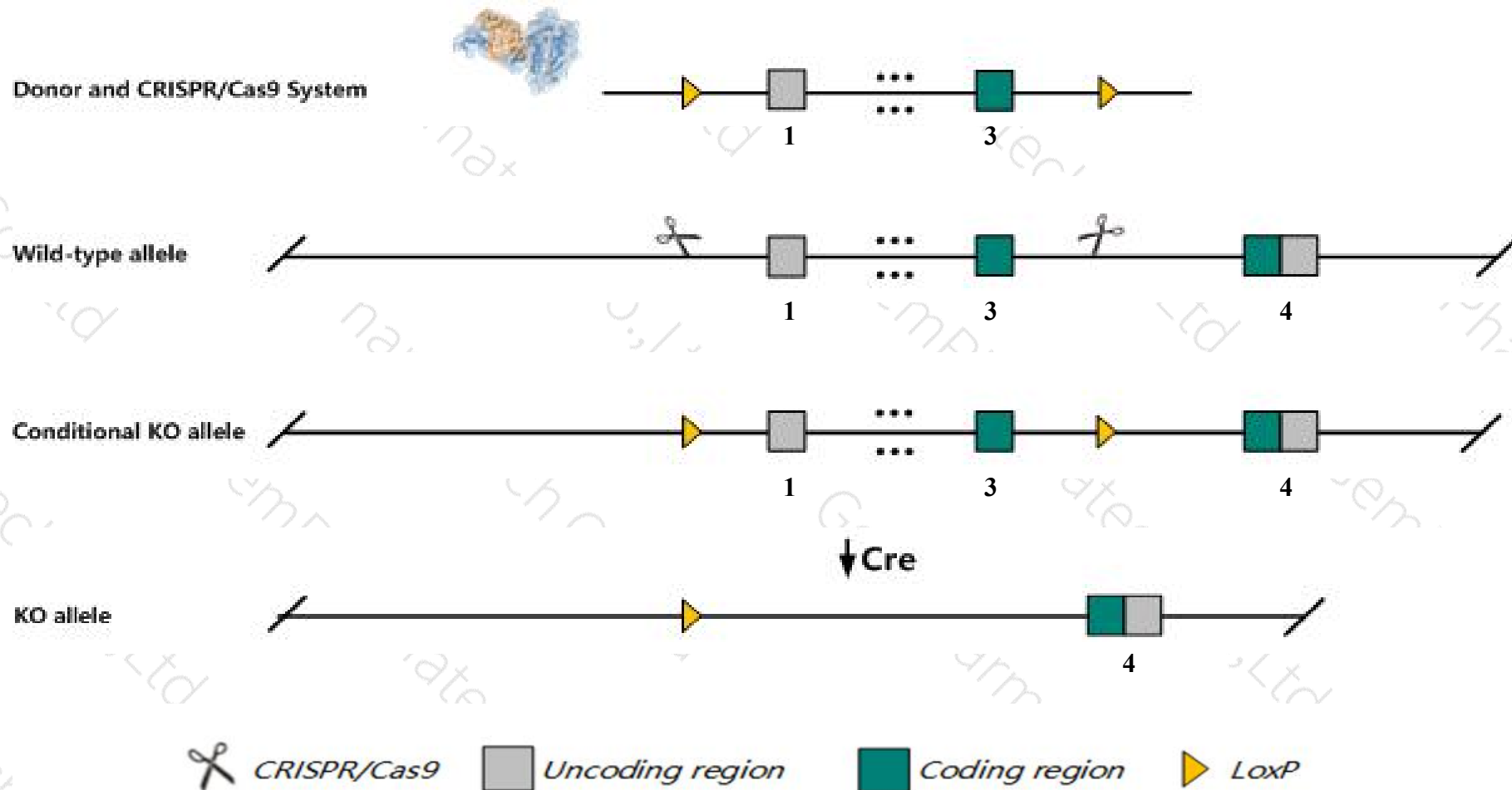|	
Project Name	*Rpl26*
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rpl26* gene. The schematic diagram is as follows:

➢ The *Rpl26* gene has 6 transcripts. According to the structure of *Rpl26* gene, exon1-exon3 of *Rpl26-206* (ENSMUST00000167436.2) transcript is recommended as the knockout region.The region contains most of the coding sequence.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Rpl26* 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 *Rpl26* gene is located on the Chr11. 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）

Rpl26 ribosomal protein L26 [Mus musculus (house mouse)]

Gene ID: 19941, updated on 13-Mar-2020

▲ Summary

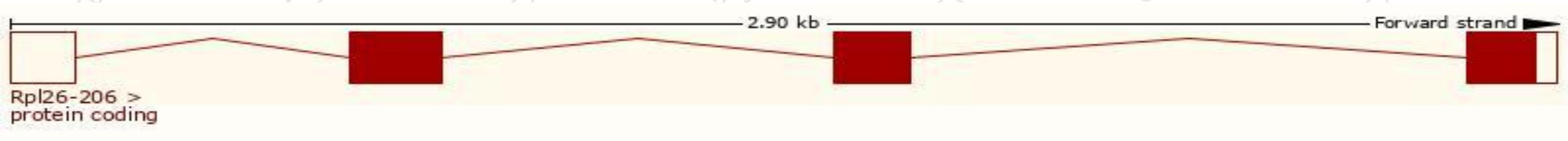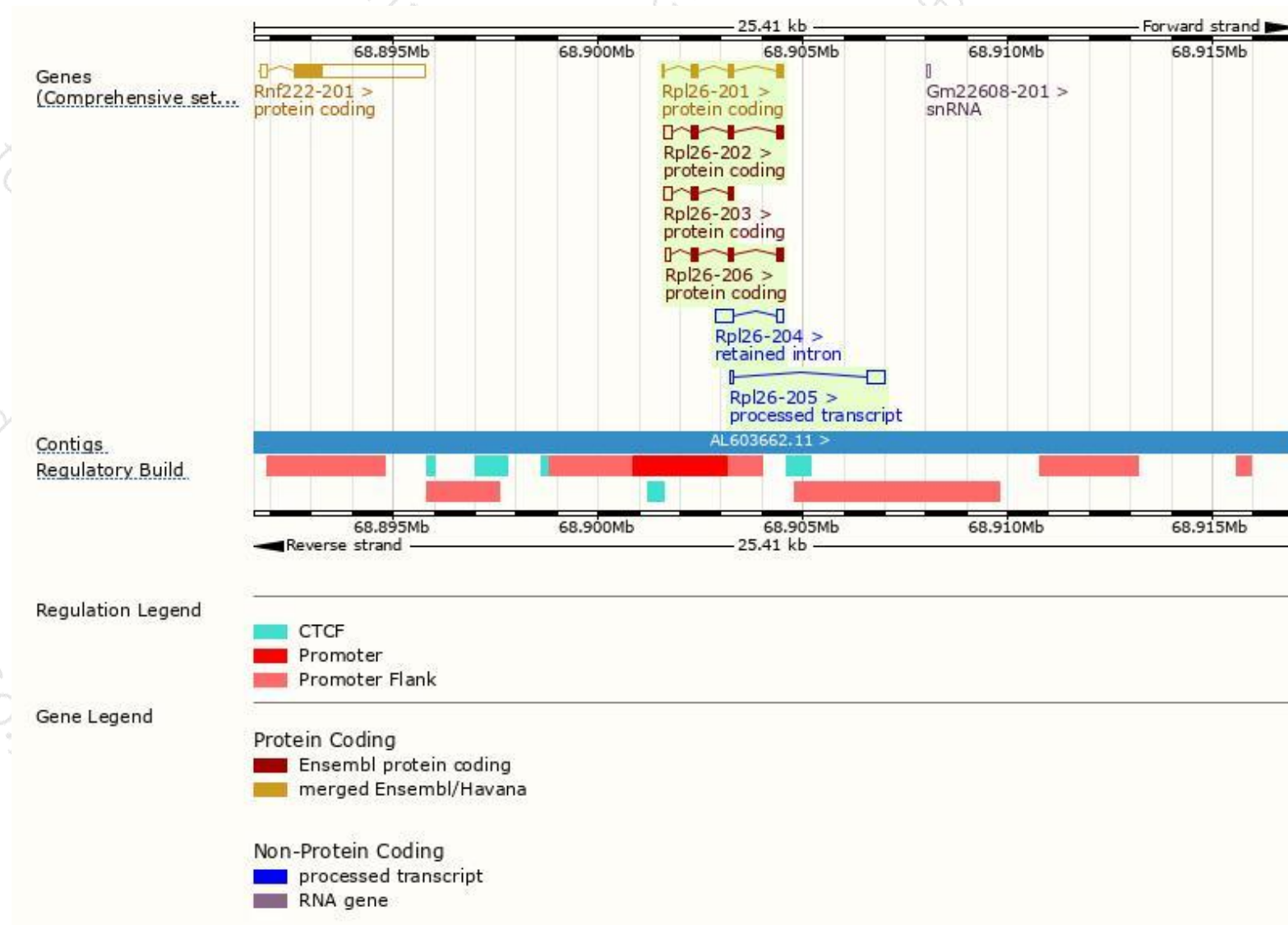|	
Official Symbol	Rpl26 provided by MGI
Official Full Name	ribosomal protein L26 provided by MGI
Primary source	MGI:MGI:106022
See related	Ensembl:ENSMUSG00000060938
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	SIG-20
Expression	Ubiquitous expression in bladder adult (RPKM 768.2), liver E14 (RPKM 703.5) and 28 other tissuesSee 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
Rpl26-206	ENSMUST00000167436.2	606	145aa	Protein coding	CCDS36187	P61255 Q4FZH2	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P2
Rpl26-201	ENSMUST00000073471.12	526	145aa	Protein coding	CCDS36187	P61255 Q4FZH2	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P2
Rpl26-202	ENSMUST00000101014.8	657	143aa	Protein coding	-	B1ARA5	TSL:5 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS ALT1
Rpl26-203	ENSMUST00000128952.7	500	103aa	Protein coding	-	B1ARA3	CDS 3' incomplete TSL:2
Rpl26-205	ENSMUST00000138973.1	490	No protein	Processed transcript	-	-	TSL:2
Rpl26-204	ENSMUST00000134403.1	636	No protein	Retained intron	-	-	TSL:2

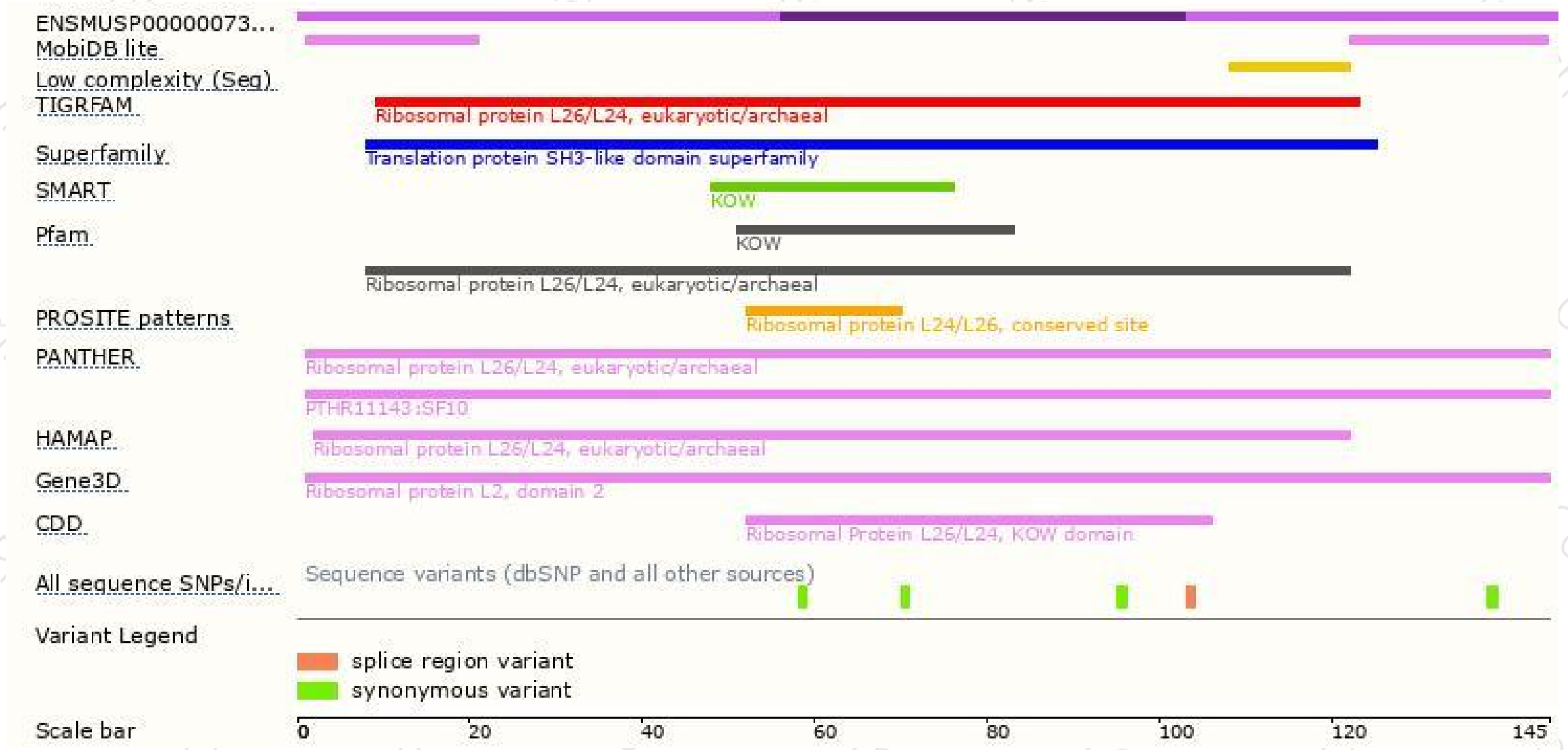The strategy is based on the design of *Rpl26-206* transcript,The transcription is shown below

Genomic location distribution

Protein domain

ENSMUSP00000073...	
MobiDB lite	
Low complexity (Seg)	
TIGRFAM	Ribosomal protein L26/L24, eukaryotic/archaeal
Superfamily	Translation protein SH3-like domain superfamily
SMART	KOW
Pfam	KOW Ribosomal protein L26/L24, eukaryotic/archaeal
PROSITE patterns	Ribosomal protein L24/L26, conserved site
PANTHER	Ribosomal protein L26/L24, eukaryotic/archaeal PTHR11143:SF10
HAMAP	Ribosomal protein L26/L24, eukaryotic/archaeal
Gene3D	Ribosomal protein L2, domain 2
CDD	Ribosomal Protein L26/L24, KOW domain
All sequence SNPs/i...	Sequence variants (dbSNP and all other sources)

Variant Legend

splice region variant
synonymous variant

Scale bar

0   20   40   60   80   100   120   145

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