

## 30S ribosomal protein S4 Protein, E. coli, Recombinant (His)

### General Information

Synonyms:	30S ribosomal protein S4; Small ribosomal subunit protein uS4; rpsD; ramA
Protein Construction:	2-206 aa
Species:	E. coli
Expression Host:	E. coli
Accession:	P0A7V8
Molecular Weight:	27.3 kDa (predicted)
AA Sequence:	ARYLGPKLKLRSREGTDLFLKSGVRAIDTKCKIEQAPGQHGARKPRLSDYGVQLREKQKVRRIYGVLERQFRN YYKEAARLKGNTGENLLALLEGRLDNVVYRMGFGATRAEARQLVSHKAIMVNGRVVNIASYQVSPNDVVSIR EKAKKQSRVKAALAEQREKPTWLEVDAGKMEGTFKRKPERSDLSADINEHLIVELYSK

### QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Tris-based buffer, 50% glycerol

### Preparation and Storage

#### Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

#### Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

One of two assembly initiator proteins for the 30S subunit, it binds directly to 16S rRNA where it nucleates assembly of the body of the 30S subunit.; With S5 and S12 plays an important role in translational accuracy; many suppressors of streptomycin-dependent mutants of protein S12 are found in this protein, some but not all of which decrease translational accuracy (ram, ribosomal ambiguity mutations).; Plays a role in mRNA unwinding by the ribosome, possibly by forming part of a processivity clamp.; Protein S4 is also a translational repressor protein, it

controls the translation of the alpha-operon (which codes for S13, S11, S4, RNA polymerase alpha subunit, and L17) by binding to its mRNA.; Also functions as a rho-dependent antiterminator of rRNA transcription, increasing the synthesis of rRNA under conditions of excess protein, allowing a more rapid return to homeostasis. Binds directly to RNA polymerase.; Part of the processive rRNA transcription and antitermination complex (rrnTAC). The complex forms an RNA-chaperone ring around the RNA exit tunnel of RNA polymerase (RNAP). It supports rapid transcription and antitermination of rRNA operons, cotranscriptional rRNA folding, and annealing of distal rRNA regions to allow correct ribosome biogenesis. This subunit may play a particular role in long-distance rRNA annealing needed for pre-rRNA processing.

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