



# Recombinant Protein Technical Manual

**Recombinant E. coli Tryptophan Synthase  $\alpha$  Chain/Trp A Protein**  
RPES3411

## Product Data:

**Product SKU:** RPES3411

**Size:** 10 $\mu$ g

**Species:** E. coli

**Expression host:** E. coli

**Uniprot:** POA877

## Protein Information:

**Molecular Mass:** 28.7 kDa

**AP Molecular Mass:** 29 kDa

**Tag:**

**Bio-activity:**

**Purity:** > 95% as determined by reducing SDS-PAGE.

**Endotoxin:** < 1.0 EU per  $\mu$ g as determined by the LAL method.

**Storage:** Store at < -20°C, stable for 6 months. Please minimize freeze-thaw cycles.

**Shipping:** This product is provided as liquid. It is shipped at frozen temperature with blue ice. Upon receipt, store it immediately at < -20°C.

**Formulation:** Supplied as a 0.2  $\mu$ m filtered solution of PBS, pH7.4.

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:**

**Synonyms:** Tryptophan synthase alpha chain; trpA;

## Immunogen Information:

**Sequence:** Met1-Ser268

## Background:

Tryptophan synthase is an enzyme that catalyzes the final two steps in the biosynthesis of tryptophan. It is commonly found in Eubacteria, Archaeobacteria, Protista, Fungi, and Plantae, but is absent from animals such as humans. Tryptophan synthase typically exists as an  $\alpha$ - $\beta\beta$ - $\alpha$  complex. The alpha subunit is responsible for the aldol cleavage of indoleglycerol phosphate to indole and glyceraldehyde 3-phosphate: L-serine + 1-C-(indol-3-yl)glycerol 3-phosphate = L-tryptophan + D-glyceraldehyde 3-phosphate + H<sub>2</sub>O. The beta subunits catalyze the irreversible condensation of indole and serine to form tryptophan in a pyridoxal phosphate (PLP) dependent reaction. Their assembly into a complex leads to structural changes in both subunits resulting in reciprocal activation.