

## Human Kinase A holoenzyme type I alpha - Purified

**Catalog No.:** AR10716PU-L

**Quantity:** 0.1 mg

**Background:** The protein kinase A holoenzyme is a heterotetramer composed of two types of subunits: Catalytic and Regulatory. The Catalytic subunit contains the enzyme's active site. It also contains a domain that binds ATP and a domain that binds the regulatory subunit. The Regulatory subunit consists of two molecules which bind one another in an anti-parallel orientation to form a homodimer; for type I subunits- this binding is covalent via disulfide bonds. This subunit also has two domains that bind cyclic AMP, a domain that interacts with a catalytic subunit, and an "auto-inhibitory domain that serves as a substrate or pseudosubstrate for the catalytic subunit. Regulatory subunits may also have biologic activity distinct from their role in modulating catalytic subunit activity. Regulatory subunits exist in two major forms, RI and RII, with each form having two subtypes designated alpha and beta. Each of the four isotypes of the regulatory subunit is encoded by a different gene. In addition, three isotypes of the catalytic subunit have been identified (alpha, beta and gamma). The different isotypes tend to have different distributions within cells and among tissues. Type I enzymes inhabit cytoplasmic, soluble fractions of the cell, whereas type II enzymes tend to associate with cellular membranes.

**Species:** Human

**Source:** E. coli

**Format:** **State:** Sterile Filtered clear solution in 50% Glycerol  
**Purity:** > 95.0% as determined by SDS-PAGE

**Applications:** The product is suitable for analysing PKA type I agonists (cAMP analogs) or antagonists. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

**Description:** Inactive Holoenzyme consisting of one dimeric regulatory subunit type I alpha and two monomeric catalytic subunits (cAMP-free). Protein Kinase A Recombinant is purified by proprietary chromatographic techniques. **Biological Activity:** Holoenzyme can be activated by adding the second messenger cAMP (Activation constant about 100nM) releasing two monomeric catalytic subunits.

**Storage:** Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer. Avoid repeated freezing and thawing. Shelf life: one year from despatch.