

**Mouse Anti-PKA $\alpha$  Catalytic Subunit [A2]: MC0336, MC0336RTU7**

**Intended Use:** For Research Use Only

**Description:** The second messenger cyclic AMP (cAMP) mediates diverse cellular responses to external signals such as proliferation, ion transport, regulation of metabolism and gene transcription by activation of the cAMP-dependent protein kinase A (cAPK or PKA). Activation of PKA occurs when cAMP binds to the two regulatory subunits of the tetrameric PKA holoenzyme resulting in release of active catalytic subunits. Three catalytic (C) subunits have been identified, designated PKA $\alpha$  cat (C $\alpha$ ), PKA $\beta$  cat (C $\beta$ ) and PKA $\gamma$  cat (C $\gamma$ ). Each subunit represents specific gene products. PKA $\alpha$  cat and PKA $\beta$  cat are closely related (93% amino acid sequence similarity), whereas PKA $\gamma$  cat displays 83% and 79% similarity to PKA $\alpha$  cat and PKA $\beta$  cat, respectively. Activation of transcription upon elevation of cAMP levels results from translocation of PKA to the nucleus where it phosphorylates the transcription factor cAMP response element binding protein (CREB) on Serine 133, which in turn leads to TFIIB binding to TATA-box-binding protein TBP1, thus linking phospho-CREB to the Pol II transcription initiation complex.

**Specifications:**

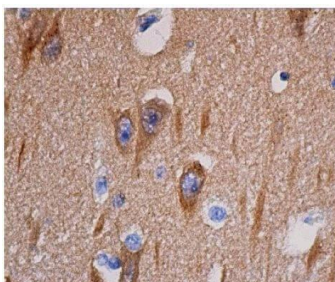
Clone: A2  
 Source: Mouse  
 Isotype: IgG2a/k  
 Reactivity: Human, mouse, rat  
 Immunogen: Epitope to aa 322-351 at the C-terminus of human PKA $\alpha$  catalytic subunit  
 Localization: Cytoplasm  
 Formulation: Purified antibody in PBS pH7.4, containing BSA and  $\leq$  0.09% sodium azide (NaN<sub>3</sub>)  
 Storage: Store at 2°- 8°C  
 Applications: IHC, ELISA, ICC/IF, IP, WB  
 Package:

Description	Catalog No.	Size
PKA $\alpha$ Catalytic Subunit Concentrated	MC0336	1 ml
PKA $\alpha$ Catalytic Subunit Prediluted	MC0336RTU7	7 ml

**IHC Procedure\*:**

Positive Control Tissue: Liver carcinoma, kidney, testis  
 Concentrated Dilution: 50-200  
 Pretreatment: Tris EDTA pH9.0, 15 minutes Pressure Cooker or 30-60 minutes water bath at 95°-99°C  
 Incubation Time and Temp: 30-60 minutes @ RT  
 Detection: Refer to the detection system manual

\* Result should be confirmed by an established diagnostic procedure.



FFPE human cerebral cortex stained with anti-PKA $\alpha$  Catalytic Subunit showing neuronal cells and neuropil staining

**References:**

1. Disorder and partial folding in the regulatory subunit hinge region of Trypanosoma brucei protein kinase A: The C-linker portion inhibits the parasite's protein kinase A. Nelson A Araujo, et al., Arch Biochem Biophys. Feb 15, 2021.
2. A G s-coupled purinergic receptor boosts Ca<sup>2+</sup> influx and vascular contractility during diabetic hyperglycemia. Maria Paz Prada, et al., Elife. Mar 1;8:e42214, 2019.

Doc. 100-MC0336

Rev. A