cAMP ELISA Kit

cAMP ELISA Kit (Colorimetric)

CATALOG #
AAA44585

PRODUCT SYNONYMS

cAMP; cAMP ELISA Kit (Colorimetric); cAMP elisa kit

PRODUCT SPECIFICATIONS

Assay Type	Competitive
Preparation and Storage	Store kit components at 4 degree C until their expiration dates. For longer term use, store the Rabbit Anti-cAMP Polyclonal Antibody at -20 degree C.

IMAGES

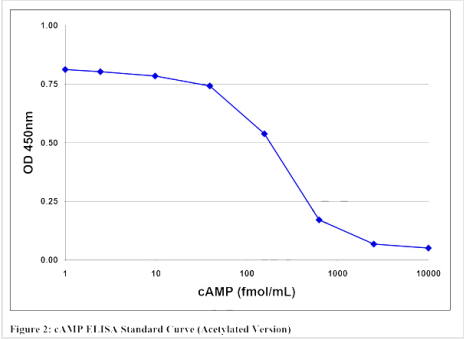

Figure 2: cAMP ELISA Standard Curve (Acetylated Version)

Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for cAMP elisa kit	Background: Adenosine 3',5'-cyclic monophosphate (cAMP) is a ubiquitous second messenger involved in various cellular activities in many cell and tissue types. It is converted from adenosine triphosphate (ATP) via adenylyl cyclases (AC), and is inactivated by hydrolysis to 5´-AMP by the actions of phosphodiesterases. cAMP may affect cellular function through several different mechanisms including the activation of cAMP-dependent Protein Kinase (PKA), Guanine Nucleotide Exchange Factors (GEFs), and Cyclic Nucleotide-gated (CNG) channels. PKA is a heterotetramer consisting of 2 regulatory (R) subunits and 2 catalytic (C) subunits. Two cAMP molecules bind cooperatively to 2 sites on each R subunit, releasing the active C subunit monomers to phosphorylate a range of downstream substrates. GEFs facilitate the exchange of GDP for GTP and, therefore, promote the activity of G proteins. Exchange Protein Activated by cAMP (Epac) 1 and 2 are GEFs activated upon binding to cAMP. Epac 1 and 2 have been implicated in regulating the activity of the small GTPase Rap-1 (26, 27). CNG channels are cation channels activated by cGMP and/or cAMP. These channels regulate membrane potential, and due to their Ca2+ permeability, can alter the levels of intracellular Ca2+. cAMP ELISA Kit is a competitive enzyme immunoassay designed to measure cAMP in cell culture supernatants, plasma, serum, saliva, urine, and cell lysates. The kit selectively measures cAMP levels without any significant cross reactivities to other nucleotides or cyclic nucleotides. Samples containing low cAMP levels may be acetylated (reagents provided) for increased sensitivity. Under non-acetylated conditions, the kit has a detection range of 1 to 1000 pmol/mL cAMP; however, under acetylated conditions, the sensitivity is enhanced (approx 100X) to a detection range of 10-2500 fmol/mL. Principle of the Assay: An anti-Rabbit IgG polyclonal coating antibody is adsorbed onto a microtiter plate. Cyclic AMP present in the sample or standard competes with Peroxidase cAMP Tracer for plate binding, in the presence of Rabbit Anti-cAMP Polyclonal Antibody. Following incubation and wash steps, any Peroxidase cAMP Tracer bound to the plate is detected with addition of Substrate Solution. The colored product formed in inversely proportional to the amount of cAMP present in the sample. The reaction is terminated by addition of acid and absorbance is measured at 450 nm. A standard curve is prepared from cAMP Standard and sample concentration is then determined.
Product Categories/Family for cAMP elisa kit	Cell Signaling and Protein Biology; G Protein Signaling/Small GTPase Assays and Vectors; Cyclic AMP Assays
References	1. Hanoune, J. et al. (1997) Mol. Cell. Endocrinol. 128:179. 2. Patel, T.B. et al. (2001) Gene 269:13. 3. Smit, M.J. and R. Iyengar (1998) Adv. Second Messenger Phosphoprotein Res. 32:1. 4. Sunahara, R.K. et al. (1996) Annu. Rev. Pharmacol. Toxicol. 36:461. 5. Sunahara, R.K. and R. Taussig (2002) Mol Interv 2:168. 6. Taylor, S.S. (1989) J. Biol. Chem. 264:8443. 7. Seino, S. and T. Shibasaki (2005) Physiol. Rev. 85:1303. 8. de Rooij, J. et al. (2000) J. Biol. Chem. 275:20829. 9. de Rooij, J. et al. (1998) Nature 396:474. 10. Kaupp, U.B. and R. Seifert (2002) Physiol. Rev. 82:769. 1. Terunuma, M. et al. (2015). Purinergic receptor activation facilitates astrocytic GABA B Receptor calcium signalling. Neuropharmacology. 88:74-81.Recent Product Citations2. Yong, Y. et al. (2014). Electromagnetic fields promote osteogenesis of rat mesenchymal stem cells through the PKA and ERK1/2 pathways. J Tissue Eng Regen Med. doi: 10.1002/term.1864.3. Jones, A. et al. (2014). Human macrophage SCN5A activates an innate immune signaling pathway for antiviral host defense. J Biol Chem. 289:35326-35340.4. Chen, X. et al. (2014). Identification of serine 348 on the apelin receptor as a novel regulatory phosphorylation site in apelin-13-induced G Protein-independent biased signaling. J Biol Chem. 289:31173-31187.5. Peterson, J. R. et al. (2014). Treatment of heterotopic ossification through remote ATP hydrolysis. Sci Transl Med. 6:255ra132.6. Rachmin, I. et al. (2014). Erbin is a negative modulator of cardiac hypertrophy. PNAS 111:5902-5907.7. Meyer, R et al. (2013). GPR37 and GPR37L1 are receptors for the neuroprotective and glioprotective factors prosaptide and prosaposin. PNAS. 10.1073-PNAS.1219004110.8. Sun, Z. et al. (2011). The WD40 repeat protein WDR26 binds Gbetagamma and promotes Gbetagamma-dependent signal transduction and leukocyte migration. J. Biol. Chem. 286:-43902-43912.9. McCoy, K.L. el al. (2010). PAR1 and PAR2 couple to overlapping and distinct sets of G Proteins and linked signaling pathways to differentially regulate cell physiology. Mol. Pharmacol. 77:1005-1015.10. Chen, M. et al. (2010). Involvement of cAMP in nerve growth factor-triggered p35/Cdk5 activation and differentiation in PC12 cells. Am J. Physiol Cell Physiol. 299:C516-C527.

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