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PGCA control peptide

Alternate names: PGC-A, Particulate Guanylyl Cyclase A

Catalog No.: AP10262CP-N

Quantity: 0.1 mg

Background: Cyclic GMP (cGMP), a key messenger in several signal transduction pathways, the intracellular levels of cGMP ate maintained by the activity of opposing enzymes: synthesizing gualylyl cyclases (GC) and hydrolyzing phosphodiesterases (PDEs). The synthesizing enzymes (GCs) are found in two forms: cytosolic (soluble) and membrane-bound (particulate), while they share similar structural characteristics, they differ in their mechanisms of physiological regulations. Most importantly, sGC contains a heme group and binds NO that activates the enzyme, while particulate GC is stimulated by natriuretic peptides. In response to G-protein couples receptor stimulation, the cGMP can be produced from GTP by either cytoplasmic, soluble guanylate cycl ase (sGC) are heterodimers (a and b polypeptide chains), that are stimulated by nitric oxide and carbon monoxide or by particulate membrane-bound guanylyl cyclases which are activated by a complex mechanism by natriuretic peptides. Particulate GC (PGCs) have 7 different isoforms, PGC-A through PGC-G and are expressed in most tissues in isoform specific manner (See Table 1). There is significant structural homology among various PGCs, there is a large N-terminal extracellular domain (ECD), a single TMD and a large intracellular domain with protein kinase activity (KLD), a C-terminal catalytic domain (CD) and in between is a dimmerization domain (DD). Both PGC-A and PGC-B are phosphorylated at Serine residues in the KLD (2). Non-ionic detergents stimulated particulate guanylate cyclase activity in cerebral cortex of rat 8- to 12-fold while stimulation of soluble enzyme was 1.3- to 2.5-fold. Among various detergents (Duguch et. Al., 2002). It has been shown that a significant number hippocampal astrocytes (67%) contained both soluble and particulate guanylate cyclases in the same cell (2).

Format: **State:** Liquid synthetic peptide

Description: Antigenic blocking peptide for AP10262PU-N

Storage: Store (in aliquots) at -20 °C. Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:
1. Wedel B. J and Garbers D. L., Trend Endocrinol. Met. 9, 213-219; 1998
2. Kobialka M and Gorczyca WA. Acta Biochimica Polonica 47, 517-528, 2000.
3. Deguch T., Amano E., Nakeane M. J. Neurochem. 27, 1027-1034, 1976.
4. Teunissen C et. al,. Brain Res. 891, 206-212; 2001.