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Molecular cloning and identification of a putative PKC epsilon cDNA from Limulus polyphemus brain

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Abstract

The protein kinase C (PKC) family of enzymes is broadly distributed and has been implicated in a diverse array of cellular functions. Recent evidence supporting PKC involvement in the regulation of the Limulus choline cotransporter prompted us to clone PKC from a Limulus central nervous system (CNS) cDNA library. An *Aplysia californica* calcium independent PKC (Apl II) cDNA probe was used to screen the library and 5' RACE SMART PCR was used to obtain the full-length sequence. The resulting cDNA, which included 5' and 3' nontranslation regions, was 4675 bp. Analysis of the encoded peptide sequence using the Swiss-prot database revealed at least 58% identity to PKC epsilon. A commercial polyclonal antibody against PKC epsilon was used in Western blots to positively label a 30 kDa protein from Limulus CNS and the expressed fusion protein of the encoded sequence. These data support the presence of a newly identified PKC-like homolog in Limulus which likely represents a PKC epsilon equivalent.

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