

The Catalytic Subunit of cAMP-Dependent Protein Kinase from *Ascaris suum* The Cloning and Structure of a Novel Subtype of Protein Kinase A

Jung, Stephan

Hoffmann, Ralf

Rodriguez, Patricio H.

Mutzel, Rupert

Hofer, Hans Werner

A complete cDNA clone encoding the catalytic subunit of cAMP-dependent protein kinase of *Ascaris suum* was constructed from two overlapping partial clones. The encoded sequence of 337 amino acids is 48 % identical with the sequence of mouse C α subunit. Approximately the same low similarity was found with the sequence of the C subunit from another nematode, *Caenorhabditis elegans*. The N-terminal 14 amino acids and the myristoylation site of the mammalian protein are not contained in the enzyme from *Ascaris*. Two cysteines (Cys33 and Cys319) replace a basic residue in the N-terminal region and an acidic amino acid near the C-terminus which are conserved in all known C subunits from other sources. The substitutions provide the possibility of disulfide bridge formation between the N-terminal and C-terminal parts of the protein. There is strong evidence that a single gene encodes cAMP-dependent protein kinase in *Ascaris*. Modelling of the sequence into the coordinates of the X-ray structure of