

Conformational study of PSTAIR region in p34cdc2 protein kinase by NMR

Youngshim Lee and Yoongho Lim

Bio/Molecular Informatics Center, Konkuk University, Seoul, Korea

TEL: +82-2-450-3760, FAX: +82-2-453-3761

The gene product of *cdc2*, p34cdc2, is a serine/threonine kinase that plays a key role in the control of both G1 to S phase and G2 to M phase transitions in the cell cycle. The cyclins are required for p34cdc2 protein kinase activation. The 16-residue sequence, EGVSTAIRESLLKE, known as PSTAIR motif is highly conserved region of protein kinase family. PSTAIR sequence is clearly important for cyclin binding. E-42, R-50, E-51, and K-56 are important amino acids for p34cdc2 protein kinase activity¹⁾. In order to know how to work p34cdc2 region to protein kinase activity, we carried out three dimensional structural study of PSTAIR region peptide by NMR spectroscopy and molecular modeling.

Reference

1. Maria J. Marcote, Daniel R. Knighton, Gabriele Basi, Janusz M. Sowadski, Paolo Brambilla, Giulio Draetta, and Susan S. Taylor, A Three-Dimensional Model of the Cdc2 Protein Kinase: Localization of Cyclin- and Suc1- Binding Regions and Phosphorylation sites (1993), Mol. Cell. Biol. 13(8), 5122-5131.