

Identification of CRABP2 Ligands Using Yeast Two-Hybrid System

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Retinoic acid (RA) is an important regulator of cell growth, differentiation and apoptosis. Also, RA is shown to act as a chemopreventive or chemotherapeutic agent against several types of cancer. The actions of RA are mediated by two classes of proteins: the retinoid acid receptors (RAR) and cellular retinoic acid-binding proteins (CRABPs). CRABP2 serve as a mediator for delivering retinoic acid to the transcription factors activated by RAR. In order to understand the mechanism of cellular signaling by retinoic acid, we are using the yeast two-hybrid system as a tool for the identification of physical protein-protein interactions. Thus, using CRABP2 as a bait, approximately 2.1×10^5 cDNAs from a human fetal brain library have been screened, out of which five were confirmed by plasmid linkage and DNA sequencing. Alpha-2-macroglobulin (A2M), interleukin enhancer binding factor 2 (ILF2), tubulin beta (TUBB), voltage-dependent anion channel 2 (VDAC2) and deoxyhypusine syntase 3 (DHPS3) emerged as ligands of CRABP2. The confirmation of these physical interactions by other methods and the study of their biological relevance are in progress and may help to clarify the role of CRABP2 in cell signaling and cell cycle progression.

Keywords: CRABP2, *Saccharomyces cerevisiae* and two-hybrid

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