

Molecular Mechanisms of Nuclear Receptors Recognition: TR, PPAR γ and NGFI-B

Igor Polikarpov

Instituto de Física de São Carlos, Universidade de São Paulo, Av. Trabalhador
São Carlense, 400 CEP 13560-970 São Carlos, SP, Brazil

Nuclear receptors are ligand-inducible transcription factors that share structurally related DNA-binding (DBD) and ligand-binding (LBD) domains. Hormone binding to nuclear receptors causes is mediated by repositioning of helix 12 and conformational changes in LBDs, which have profound effects on NR interactions with the cognate DNA response elements and co-regulating proteins, hence provoking profound changes in gene transcription activation and repression. Mechanistic details of this complex molecular event continue to be elusive. To shed more light on molecular basis of NR:ligand, NR:proteins and NR:DNA recognition events we undertook studies of structure and dynamics of several nuclear receptors. Here we will discuss our recent results on TR, PPAR γ and NGFI-B nuclear receptor, which reveal some of the basic events mediating this complex recognition cascade.