

Abstract:

Transcription factors play crucial regulatory role within the cell and the entire multicellular organism. The important factor is its ability to interact with other regulatory proteins and DNA. Despite the fact that a large part of the interaction network is already documented, detailed information on the structure and dynamics of protein-protein and protein-DNA complexes is still scarce.

In this thesis we focused on the possibility of studying conformational changes given by the transcription factor-DNA complex formation using the methods of structural mass spectrometry: hydrogen/deuterium exchange and chemical crosslinking. As a model, we chose a transcription factor FOXO4 which DNA binding domain is structurally well characterized both in free form and in the complex with DNA.