

Atomic-level investigations of the PSD-95 GK domain and its interaction with GKAP

P-04.2-04

F. Farkas^I, A. Czajlik^I, G. Batta^{II}, B. Péterfia^I, **Z. Gaspari^I**

^IPazmany Peter Catholic University, Faculty of Information Technology and Bionics, Budapest, Hungary, ^{II}Department of Organic Chemistry, University of Debrecen, Debrecen, Hungary

The postsynaptic density (PSD) is an elaborate network of proteins beneath the postsynaptic membrane. Understanding the 3D organization of the PSD is crucial in deciphering the mechanistic molecular events behind learning and memory, as well as a number of neurological disorders. Our work aims at detailed characterization of the structural changes accompanying the binding events between PSD-95 and GKAP, two of the most important scaffold proteins in the PSD. We have expressed a segment of the GK-binding region of GKAP, which is intrinsically disordered, as well as the globular GK domain of PSD-95. Their interaction was characterized in detail using biochemical and biophysical methods like pull-down assay and biolayer interferometry. The GK domain has been successfully expressed in ¹⁵N, ¹³C-labeled form and triple-resonance spectra have been obtained for NMR resonance assignment and for further structure and dynamics studies.