Curriculum Vitae

Dr. Luigi Russo

Luigi Russo graduated in Environmental Sciences at the Second University of Naples. He got his PhD in Chemistry at the Second University of Naples (supervisor Prof. Roberto Fattorusso). After the phD, he carried out his research at the Department of NMR-based structural biology of the Max Planck Institute for biophysical chemistry as post-Doc under the supervision of Prof. Christian Griesinger (2009-2012). Since November 2012 to November 2015 Dr. Russo worked as post-Doc at Istituto di Biostrutture e Bioimmagini of the National Council of Italy, Naples. Since 2016 he is researcher and teacher at Department of Environmental, Biological and Pharmaceutical Science and Technologies of the University of Campania.

The scientific activity of Dr. Russo is focused on the conformational analysis and dynamic study, by nuclear magnetic resonance and Molecular Dynamics simulations (MD) techniques, of proteins of biotechnology and environmental interest. Dr. Russo worked at the Department of Environmental Sciences, and because of his PhD thesis was involved in scientific collaboration with the CNR, Naples.

The structural determination of prokaryotic zinc finger domains and the characterization of their functional interaction with the DNA have been the object of his degree thesis and the focus of the PhD thesis. In particular, he initially contributed to the NMR structural and dynamic characterization, of the Ros protein, a transcriptional repressor expressed in *Agrobacterium tumefaciens,* obtaining the structure of a novel protein fold. Then, he started the NMR structural determination of ML4, homologue of Ros but lacking the zinc ion, in complex with its DNA cognate. The determination of the three-dimensional structure was conducted using 15N and 15N/13C samples, acquiring the appropriate 2D/3D NMR spectra and analyzing them to determine DNA-ML4 complex structure and dynamics. During the post-Doc in Germany the scientific activity of Dr. Russo was focused on the development of innovative NMR techniques. In particular Dr. Russo defined an alternative approach to explore multi-domain dynamics using the combination of NMR paramagnetic and MD data. Moreover he optimized new protocols to perform the structural calculation based on MD techniques using as experimental NMR constraints only backbone chemical shifts.

Successively, Dr. Russo worked as post-Doc at IBB of the CNR. During these two years Dr. Russo developed a strategy using NMR and MD techniques to better describe the effects of protein dynamics in the DNA recognition mechanisms. In the last years Dr. Russo is involved in the study of protein folding mechanisms by using different techniques (UV-Vis, NMR, DSC and MD). In particular, his activity is focused to define a strategy by combination of data from different techniques able to provide site-specific information at high resolution on temperature-dependent changes in the structure of exchanging states.

Finally, the results of the scientific activity have been published on international journal and presented as oral presentations in several conferences.