

Vladimír Sklenář

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Citation Report:

Sum of articles WoS: 107

Sum of articles WoS (2004 - 2008): 16

Sum of the Times Cited: 6662

h-index : 32

Number of patents: 2

Prof. Sklenář is a group leader of NMR laboratory and a deputy Head of National Centre for Biomolecular Research (NCBR). He has been involved in the development of NMR techniques and their applications to study the structure and dynamics of biological macromolecules for past 20 years. His methodological contributions have focused on designing novel NMR experiments for water suppression, indirect detection of low sensitive nuclei, triple-resonance measurements in C-13 and N-15 labelled RNA and DNA oligonucleotides, and for extracting accurate descriptors of inter-atomic interactions, which can be used as structural restraints for calculating spatial, three-dimensional structures of both nucleic acids and proteins. Recently, he has used NMR to study the protein dynamics and dynamics of protein-ligand interactions using NMR relaxation measurement and spectral density mapping complemented by molecular dynamics simulations. Prof. Sklenář is involved also in theoretical calculations of NMR parameters, such as chemical shielding tensors and spin-spin scalar interactions, using modern apparatus of quantum chemistry. He has published more than 100 publications in peer-reviewed international journals, which acquired over 6800 citations, with H-index of 32.

NMR laboratory is currently equipped with a 600 MHz NMR spectrometer (Bruker Avance) with the TCI cryoprobe, a 500 MHz NMR spectrometer (Bruker Avance) for spectroscopy in liquids and the CP MAS accessory for solid state measurements, and a routine 300 MHz NMR system (Bruker Avance) for the measurements in liquids. The lab has installed and mastered a full armoury of computational tools for studies of biomolecular structure and dynamics of both proteins and nucleic acids.

Five Selected Publications:

- Macek, P., Chmelík, J., Křížová, I., Kadeřávek, P., Žídek, L., Wildová, M., Hadravová, R., Chaloupková, R., Pichová, I., Ruml, T., Rumllová, M., Sklenář, V.: J. Mol. Biol. 2009, in press: NMR structure of the N-terminal domain of capsid protein from the Mason-Pfizer monkey virus.
- Fiala, R. and Sklenář, V.: J. Biomol. NMR 2007, 39, 153-163: ¹³C-detected NMR Experiments for Measuring Chemical Shifts and Coupling Constants in Nucleic Acid Bases.
- Křížová, H., Žídek, L., Stone, M., Novotny, M.V., and Sklenář, V., J. Biomol. NMR 2004, 28, 369-384: Temperature Dependent Backbone Dynamics of Major Urinary Protein-I Complexed with the Pheromone 2-sec-butyl-4,5-dihydrothiazole.
- Munzarová, M. and Sklenář, V., J. Amer. Chem. Soc. 2003, 125, 3649-3658: A DFT Analysis of NMR Scalar Interactions Across the Glycosidic Bond in DNA.
- Fiala, R., Czernek, J. and Sklenář, V. J. Biomol. NMR., 2000, 16, 291-302: Transverse Relaxation Optimized Triple-Resonance NMR Experiments for Nucleic Acids.