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## Communicating with fluorescent molecular sensors in biological environments

Fluorescent molecular sensors have become valuable tools in the analytical biosciences owing to their high sensitivity and their ability to track proteins in their native environment. A major limitation in using these probes, however, is the lack of a general and easily applicable method for providing them with high selectivity and high signal-to-noise ratios. In addition, many of these sensors are designed according to the "lock and key" paradigm; therefore, they cannot be used to analyze bio-molecule combinations. In our group, we aim to address these problems by developing novel classes of fluorescent molecular sensors. I present our recent development of fluorescent switches that light up in the presence of specific protein biomarkers, as well as probes that can shed light on analyte combinations in biofluids. In addition, the design of a sensory system that utilizes both specific and non-specific interactions for distinguishing between protein isoforms will be described. The ways by which such probes could be used to screen for drug-protein interactions will be also discussed.

### Biography

Leila Motiei has obtained her MSc in Chemistry from Bar-Ilan University, Israel in 2003. She then moved to the Scripps Research Institute in La Jolla, CA where she worked with Prof. M. Reza Ghadiri as a Research Assistant from 2004-2006. Her research involved the study of antibacterial cyclic D, L- $\alpha$ -glycopeptides. In 2007, she returned to Israel to conduct her PhD studies at the Weizmann Institute of Science under supervision of Prof. Milko E. van der Boom studying the exponential formation of molecular-based assemblies. Since 2012, she has been a Staff Scientist in the group of Dr. David Margulies at the Weizmann Institute of Science. Her research interests focus on chemical biology especially on molecular recognition and bio-sensing.

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