>>> ANNOUNCEMENT

Diana P Gonçalves-Schmidt, PhD

G-quadruplexes, from recognition and stabilization to DNA nanoarchitectures

ABSTRACT

During the past decade, there has been growing interest in the structure, recognition and function of intramolecular G-quadruplexes. The best studied example is the human telomeric DNA quadruplex that leads to inhibition of telomerase, an enzyme active in most cancer cells.
A series of new porphyrins and two porphyrazines show the ability to selectively recognize and induce the formation of human telomeric G-quadruplexes in the absence of salts, in a process that mimics molecular chaperones.
G-quadruplex interactions can also be an interesting interaction element for the construction of artificial nanometer-scale DNA structures. They can be easily induced by salts, and therefore act as a construction element orthogonal to Watson-Crick base pairing. G-quadruplex interactions modules were used to induce dimeric, multimeric and topologically interlocked (catenated) DNA nanoarchitectures. In another project, light responsive azobenzene modified or caged nucleotides were used for the construction of reversibly and irreversibly switchable G-quadruplex nanodevices. Finally, a short outlook on proposed future work will be presented.

BIO

2011-present	Maternity leave
2008-2010	Alexander von Humboldt postdoctoral fellow, Goethe University Frankfurt, Institute of Organic Chemistry and Chemical Biology: *Design and synthesis of DNA nanoarchitectures using G-quadruplex interaction modules as DNA recruiter and glue. Synthesis of photoswitchable molecules*
2007	Postdoctoral fellow, Konstanz University, Department of Chemistry: *Design and synthesis of poly-oxazoles and porphyrins for the recognition of the thrombin aptamer*
2003-2006	PhD, University of Cambridge, Peterhouse, UK: *Towards G-quadruplex recognition by porphyrins and porphyrazines*
1998-2002	Degree in Chemistry and Food Chemistry, Aveiro University, Portugal

April 22, 2013 at 2 p.m.

Leibniz-Institut für Polymerforschung Dresden e. V.
Max Bergmann Center of Biomaterials Dresden
Seminar Room B1, Ground Floor, Budapester Straße 27

Contact: Prof. Carsten Werner, IPF/Max Bergmann Center of Biomaterials Dresden

Leibniz-Institut für Polymerforschung Dresden e. V.

MAX BERGMANN center of biomaterials dresden