The Research Group
Structural Biology Brussels (SBB)

has the honor to invite you to the public defense of the PhD thesis of
Sara CONTRERAS MARTOS
to obtain the degree of Doctor of Bioengineering Sciences

Title of the PhD thesis:
Structural and functional characterization of two intrinsically disordered regions of the multi-domain transcriptional co-activator CREB-binding protein (CBP)

Promotor:
Prof. Dr. Peter Tompa

The defense will take place on
Friday October 6 2017 at 16:00h
in Auditorium E.0.12 at the Campus Humanities, Sciences and Engineering of the Vrije Universiteit Brussel, Pleinlaan 2 - 1050 Elsene, and will be followed by a reception.

Members of the jury:
Prof. Dr. Daniel Charlier (chairman)
Prof. Dr. Dominique Maes (secretary)
Prof. Dr. Jo Van Ginderachter
Prof. Dr. Gustavo Gutierrez Gonzalez
Dr. Daniel Panne (EMBL Grenoble)
Prof. Dr. André Matagne (Univ. of Liège)

Abstract of the PhD research

Single point mutations within intrinsically disordered regions (IDRs) of CBP (CREB-binding protein) and p300 have been associated with development of lung and cervical cancer. CBP/p300 are multi-domain transcriptional regulators involved in diverse cellular pathways such as growth, differentiation, apoptosis and DNA repair. Although more than 400 proteins have been found to interact with one or more of the functional CBP/p300’s globular domains, little is known about the nature and role of the IDRs that connect those folded domains.

Therefore, in this work I have structurally characterized two IDRs of CBP/p300 to better understand the role of these regions through the identification of novel interaction partners. I also explored the functional consequences of the interactions and mapped the binding sites by employing state-of-the-art techniques such as solution nuclear magnetic resonance spectroscopy.

This research provides a clear picture of how diverse in structure and function IDPs are, even within the same molecule, and provides tools that facilitate their studies in the near future. These results will help to understand relevant physiological processes, and may provide new hints and links to comprehend pathological states.

Curriculum vitae

Professional goals
As a health biologist, I’m currently finalizing my PhD studies that focuses on medically relevant human proteins. I love to understand disease and more importantly to work in team with cooperative spirit. Since I enjoy working towards applicable solutions I wish to further develop my career as a project manager in the healthcare sector in Spain.

2017 - PhD in Bio-engineering Sciences at VIB-VUB Center for Structural Biology
2012 - Internship master at the VIB-VUB Center for Structural Biology
2011- Licenciatiiae in Health Biology at University of Barcelona

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