

# Integrative Approaches in Structural Biology

*Tuesday, 26 September 2023 15:55 (15 minutes)*

With recent technological and computational advances, structural biology has begun to address increasingly difficult questions, including complex biochemical pathways and transient interactions between macromolecules. For many years our research group has been focused on the study of the structural characteristics of different classes of proteins. In this workshop, an example of a synergistic approach chosen from my previous research will be described and it will be shown how the joint use of *in silico*, solution and solid state techniques is crucial to clarify the catalytic mechanism of an enzyme that exploits the flexibility structure of its substrate.

Considering the context of this workshop, among the proteins studied by our research group, two in particular will be mentioned for their relevance in the control of the inflammatory response of the dental pulp: the first class is represented by the peroxisome proliferator-activated receptors (PPARs), a class of nuclear receptors primarily involved in metabolic homeostasis but also possessing other functions including maintaining the vitality of teeth after the removal of pathogens in dental tissues; the second protein that will be mentioned is  $\beta$ -catenin, which is active in several phases of dental development and whose signaling pathway seems to be involved in the regulation of the onset of periapical periodontitis.

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**Session Classification:** Session