Conformational studies of proteins and peptides and their application at biomaterials development

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Proteins and peptides are key molecules in all crucial process for life appearing and maintenance, as immune protection, generation and transmission of neural impulses, growing, and differentiation cell control. The way that proteins and peptides work is strictly related to their three-dimensional conformation equilibrium making the understanding of their structural modifications one of the most important scientific challenges since the last fifty years. In this sense, studies concerning those changes promoted by pH and temperature variations or external agents addition, and due to amino acid substitutions are all essential to understand, control and develop effective treatment of several pathologies. Additionally, the comprehension of protein and peptides conformation is essential to achieve their correct conjugation to polymeric and ceramic materials for successful development of biomaterials as biosensors and biomimetic tissues. Hence, this talk aims to present some conformational studies of new proteins and peptides with interesting biotechnological applications that have been performed in several structure levels.