Title: **Study of the interaction of ligand Palmatine with DNA structures with potential biomedical interest.**

Student: Noelia Ruiz Dorado
Date: January 2020
Supervisor/s: Dr. Raimundo Gargallo Gómez
Departament of Analytical Chemistry

The sequences of deoxyribonucleic acids (DNA) are part of the genetic code of most living organisms. These sequences adopt the well-known double helix structures, B-DNA but also can form other, non-B-DNA structures such as G-quadruplex and i-motif, which are formed by sequences rich in guanine and cytosine, respectively. Recently, these structures have been found at the ends of telomers and near the human promoter regions of several oncogenes. In addition, several studies indicate the biological importance in genetic transcription processes and their possible role as a telomerase inhibitor. The objective of this project is to study the interactions of some G-quadruplex, i-motif and dsDNA structures with the palmatine, an alkaloid ligand.

Firstly, a bibliographic search has been carried out to reach the fundamental knowledge of these folded structures, their behavior in solution and about their possible biological importance through the Scifinder database.

Secondly, the characterization of these folded structures and the effect of the structures and their interaction with the ligand has been studied by using molecular absorption, molecular fluorescence and circular dichroism spectroscopies, as well as by size exclusion chromatography.