CIRCULAR DICHROISM (CD) LABORATORY

Address

Institute of Biosciences & Applications

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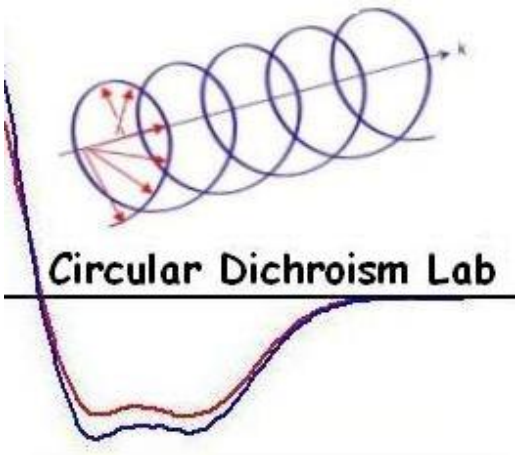

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Dr. Maria Pelecanou (IB-A)

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Dr. Georgios Nounesis (INRASTES)

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Description of the laboratory

Circular Dichroism (**CD**) is a well-established spectroscopic technique based on the differential absorption of circularly polarized light from optically active molecules and it is widely used for the study of conformation and interactions of biological macromolecules, like peptides, proteins and nucleic acids. Advantages of **CD** include its high sensitivity - requiring the use of small amount of sample - and its versatility in the fine tuning of experimental conditions

The equipment of the **CD** laboratory includes a JASCO-715 spectropolarimeter equipped with Peltier system for temperature control. This **CD** infrastructure was acquired in 1998 within the framework of the “Center for Crystallographic Studies of Macromolecules (CCM)” which was financed through a grant (EPET) from the General Secretariat for Research and Technology as a network of three Institutes of NCSR “D” (the former: Biology, Physical Chemistry, Radioisotopes & Radiodiagnostic Products) and other Greek academic institutions.

The **CD** lab is located at Room Y35 of IB-A, has been operating since 1998 under the supervision of research scientists of IB-A addressing mainly research projects of the academic community and is interconnected with other laboratories of NCSR "Demokritos" related to structural studies (NMR Laboratory, X-Ray Laboratory).

Activities/Services

The objective of the CD lab is to perform CD experiments on liquid samples. The CD method is highly accurate, sensitive, reproducible, and non-destructive to the sample. CD is ideal for:

- Conformational analysis of biological macromolecules (e.g. proteins)
- Investigating the influence of denaturants, solvents and ligands on conformation and stability of macromolecules
- Monitoring conformational changes under different conditions/thermal stability studies
- Investigating protein-protein interactions as well as interactions/complexation of proteins with various ligands, metals, stabilizers, inhibitors, drugs, etc.
- Studying Interactions/complexation of nucleic acids
- Comparative structure and stability studies of proteins and their mutants
- Distinction of the absolute configuration of optically active compounds and quantitative analysis of enantiomeric mixtures