

Title of the project: Circular Dichroism and protein folding

Approximate time required: 3 days

Short description of the course:

The aim of the course is to provide an overview on the molecular basis of optical activity and, mainly, on its application to the circular dichroism (CD) of proteins. The course will help to understand the theory behind the analysis of secondary and tertiary structure, stability and interactions of proteins by use of CD spectroscopy.

Special topics:

- Investigation of protein secondary structure from far-UV/near-UV CD.
- Study of thermal and/or chemical unfolding and refolding in terms of thermodynamics and kinetics.
- Investigation of association-induced structural change and determination of binding constants.

During the first day, the basic aspects of circular dichroism and its application to proteins will be introduced. In addition, the analysis of the thermodynamics of protein folding which can be determined from CD data will be shown. The second and third day concentration-dependent CD measurements will be performed and analysed. The measurements will be performed by using both protein samples whose secondary structure and thermodynamic behavior is known, and protein samples which you might wish to bring along.

If you wish to bring protein samples, please contact me before the course. We then discuss the buffer components which can be used as some components can't be used due to their (too) high absorption.

In case of any questions, please feel free to contact me.

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(Physical Chemistry I, AG Protein interactions)

The experiment will be offered: December 2013

Number of possible participants: 3