Résumé du séminaire donné par

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dans le cadre des «Vendredis de l'ESBS»

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Amphi J.-P. EBEL - ESBS

Titre :

La relation entre la structure, la fonction et la dynamique de protéines : études par spectroscopie infrarouge

Résumé / Abstract :

Infrared spectroscopic studies on structure, function and dynamics of proteins

The research of our group focuses on those chemical processes that are responsible for the energy supply of living cells and more specifically respiration. We have extensive interest in experiments which reveal at the molecular level how protons are drawn through proteins. It is crucial to determine the pK value of the crucial amino acid side chains and to define the structural, dynamic and energetic requirements for the proton transferring groups in the proton pumping enzymes and the cofactor sites that rule them.

A specific application is electrochemically induced FTIR difference spectroscopy that enables the observation of protein action at the level of single functional groups within huge proteins, including individual protonation reactions. Essential contributions to the understanding of the molecular mechanism of enzymes of the respiratory chain were made. Current research as well as the development of far infrared (THz) spectroscopy for the study of membrane proteins from the respiratory chain is presented.