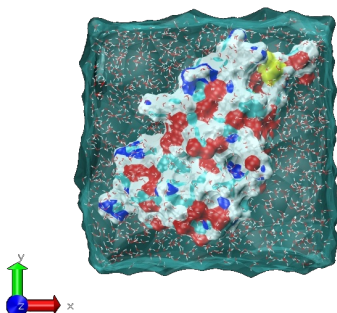




Analysis of Macromolecular Structures



This is to certify that **Meriem Echbarthi** has attended and satisfactorily completed the **International Course on Analysis of Macromolecular Structures**, organized at *Centro Nacional de Biotecnología, Consejo Superior de Investigaciones Científicas (CNB/CSIC)* from **June, 21st to July, 2nd 2010**, sponsored by **CYTED** (Programa Iberoamericano de Ciencia y Tecnología para el Desarrollo) through the **FreeBIT** (Free BioInformatics Tools) network, **EMBnet** (European Molecular Biology Network) and **CNB/CSIC**.

This is a full-day, two week intensive theoretical-practical course with a duration of **70 lecturing hours** that provided a broad coverage of various aspects of macromolecular structure analysis:

- In-depth Analysis of Protein Structures using STING (**Goran Nešić (Neshich), PhD**, from Embrapa Informática Agropecuária and EMBnet/Brazil)
- Pharmacogenomics (**Allan Orozco, PhD**) from Instituto Nacional de Bioinformática, Spain and EMBnet/Costa Rica)
- X-Ray Crystallography (**José Casasnovas, PhD** and **Cesar Santiago, MSc**) from the Department of Macromolecular Structure and Service of X-Ray Crystallography, CNB/CSIC, Spain
- Protein Structure prediction, from secondary to homology modeling and threading technologies (**Juan Carlos Sánchez, MSc** from **Florencio Pazos, PhD** group of Computational Systems Biology, CNB/CSIC)
- Molecular Dynamics, Docking and 3D-QSAR, Quantum Dynamics (**José R. Valverde, PhD, MD**, Scientific Computing Service, CNB/CSI and EMBnet/Spain).

José Ramón Valverde Carrillo
Head of Scientific Computing Service, EMBnet/CNB
CNB/CSIC

Madrid, July 2nd, 2010

c/ Darwin, 3
Campus Universidad
Autónoma de
Madrid
Cantoblanco
28049 MADRID
TEL.: 91 5854500 C
FAX: 91 5854500