



School of Natural Sciences

MCB Seminar

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Spying on ABC transporters to understand their Molecular mechanism of transport

By Dr. Maria Elena Zoghbi

Abstract:

ATP-binding cassette (ABC) transporters constitute one of the largest families of membrane proteins, and are found in all domains of life. ABC transporters use energy from ATP to transport a large diversity of substrates, including nutrients, lipids, xenobiotics, and even ions. Some of them, like P-glycoprotein, play a critical role in the development of multidrug resistance in cancer cells, and cause undesired drug/drug interactions. There is especial interest in understanding the molecular mechanisms of ABC transporters during their normal functioning and to determine how they can be modulated by therapeutic drugs. Our spectroscopic studies of ABC transporters provide information about their conformational changes while they hydrolyze ATP and move substrate. Our results have also stressed the importance of studying membrane proteins in near-native conditions. These studies are expected to provide useful information for the rational design of therapeutic drugs.

Biography:

Maria Elena is a biologist with Ph.D. in Physiology and Biophysics. Her research career has been focused on understanding protein function and mechanisms using a combination of biochemical, structural, and cellular approaches. She is from Venezuela, where she studied biology at the Central University of Venezuela (UCV), and the Ph.D. at the Venezuelan Institute for Scientific Research (IVIC). She moved to the U.S. to carry out her doctoral thesis at the University of Massachusetts Medical School, where she also stayed for her first postdoctoral training. For her second postdoctoral training she went to Texas Tech University Health Sciences center, where she was a Senior Research Associate until June 2016, when she joined UC Merced. The main research interest of her lab is to understand the function of proteins, especially membrane proteins, from a biochemical and structural perspective.

Date:

Tuesday,
December 13,
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Time:

12:00pm

Location:

SE1 270K

**For More
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