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Oral Presentations: STEM

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Zithlaly Amezquita, Mississippi University for Women

Endogenous CFTR Expression in Human Epithelial Cell Lines

Cystic Fibrosis Transmembrane-conductance Regulator, CFTR, is a large size glycoprotein that is present on the cell surface of many epithelial cells. There are several mutations that effect the function of CFTR. The most common mutation, $\Delta F508$, causes a genetic disease called Cystic Fibrosis (CF). CF is common among the Caucasians of Northern European origin. The endogenous CFTR expression is difficult to detect by conventional western blotting methods. Using a newly developed western blotting method, I propose to detect the endogenous CFTR expression in human pancreatic cell lines, viz, Capan-I and CFPAC. By using human lung cell lines that have been transfected with the CFTR gene, I will also be comparing the endogenous CFTR expression to its exogenous expression.

Anh Hoang, University of Mississippi

LC-MS Identification of Serum Proteins Adsorbed onto Ionic Liquid-Coated Nanoparticles

Nanocarriers are promising candidates for drug delivery due to their size and tunable surface characteristics. However, when they are intravenously injected, few particles make it to their designated location. This is because upon entering the bloodstream, the serum in the blood, which is rich with a diversity of proteins, adsorbs onto the particles' surfaces forming a protein corona. Many of the attached proteins trigger the mobile immune system and are removed by macrophages, and many particles are then filtered out by the liver and kidneys. Ionic Liquids (ILs), which consist of asymmetric, bulky components that are liquid $<100^{\circ}\text{C}$, are emerging as a promising surface modification technology that can be used to reduce serum protein adsorption. The results indicated that IL-coated NPs were able to enrich new proteins from the serum, and the identity of the proteins was determined by the chemical identity of the IL. These findings could provide the identity of adsorbed proteins, and enable directed drug delivery.