

Pharmacy

Department Seminar

Date: 30th October
2017

Time: 5pm

Venue: S4A Level 3
Room A & B

Effect of Selective Estrogen Receptor Modulators on Lithocholic Acid Metabolism



Sumit Bansal graduated with a B. Pharm. from Kurukshetra University, Kurukshetra, India and M. Pharm. from Manipal University, Manipal, India. He is pursuing his Ph.D. under the supervision of Dr Lau Aik Jiang in the area of drug metabolism and toxicology. His research focuses on investigating the effect of selective estrogen receptor modulators on lithocholic acid metabolism.

Among the bile acids, lithocholic acid (LCA), a secondary bile acid, is the most toxic bile acid. LCA is detoxified predominantly by sulfotransferase 2A1 (SULT2A1) into lithocholic acid sulfate. LCA is also metabolized by cytochrome P450 3A (CYP3A) into 3-ketocholanic acid (major metabolite). Selective estrogen receptor modulators (SERMs) are drugs that are used for the treatment of breast cancer and prevention of osteoporosis. Previously, SERMs namely clomifene and tamoxifen were reported as inhibitors of human liver cytosol-catalyzed dehydroepiandrosterone (a SULT2A1 probe substrate) sulfation. In addition, SERMs namely raloxifene and tamoxifen were reported as CYP3A inhibitors. However, it is not known whether SERMs affect LCA metabolism.

In this seminar, we will discuss the enzyme kinetics of LCA sulfation/oxidation, the inhibitory effect of SERMs and their structural analogues/metabolites on LCA sulfation and LCA 3-oxidation, and how these drugs inhibit LCA metabolism.