OMICS Group Conferences
Accelerating Scientific Discovery

4th International Conference on
Biomarkers & Clinical Research
July 15-17, 2013 Courtyard by Marriott Philadelphia Downtown, USA

New targeted-colon delivery system: *In vitro* and *in vivo* evaluation using X-ray imaging

Ibrahim A. Alsarra
King Saud University, Saudi Arabia

The aim of this study was to formulate a new orally-administered colon delivery system of 5-flurouracil (5-FU) for the treatment of colon cancer. The system was designed to target 5-FU directly to the colon with high potential of much more effective and less toxic colon cancer treatment. The system was prepared by compression coating technique using granulated chitosan. The method was optimized by studying the effect of granulation and thickness of the coat with respect to the in vitro performance in a medium mimicking mouth-to-colon environment. The *in vivo* selectivity of the system was assessed by X-ray imaging technique using beagle dogs. Results showed that granulation of chitosan were effective in protecting against the known acid solubility of the polymer. Formula (F7) with coat weight of 50 mg/tablet exhibited the best protection profile with <10% of the drug released after 6 h. The resistance of the system to the simulated gastro-intestinal media was reduced as the chitosan coat weight decreases. The performance of the system in a rat caecal contents containing-medium showed that the susceptibility of this system for the enzymatic degradation by colonic enzymes. The X-ray imaging gave rise to the *in vivo* selectivity of this system for colon targeting by showing the resistivity of the system to the stomach and small intestine environment and the selective disintegration of the system inside the large bowel.

Biography

Ibrahim A. Alsarra received his Bachelor of Pharmacy (B.S.), in 1996 from College of Pharmacy, King Saud University, Kingdom of Saudi Arabia and his Doctor of Philosophy (Ph.D.) in Pharmaceutical Biotechnology and Drug Formulation Development, Division of Pharmaceutical Sciences, School of Pharmacy, University of Missouri-Kansas City, Missouri 64110-2265, USA. He joined King Saud University in 2002 and is currently the Deputy Director for Research and Technical Affairs, Centre of Excellence in Biotechnology Research, the only biotechnology center in Saudi Arabia, King Saud University. He is the President of Saudi Pharmaceutical Society and the Editor-in-Chief of Saudi Pharmaceutical Journal, a peer-reviewed and ISI-Indexed Journal.

ialsarra@ksu.edu.sa