

2nd International Conference on Pharmaceutics & Novel Drug Delivery Systems

20-22 February 2012 San Francisco Airport Marriott Waterfront, USA

TITLE

Marine Biomineral for Better Biopolymers than Chitosan

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The ocean hosts diverse organisms, each equipped with peculiar defence and metabolic systems for survival in sometimes harsh environments. We and others have reported on the benefits of one such compound – chitosan - a natural polymer, possessed of anticancer properties itself, which can be formulated into various drug delivery systems (DDSs) such as hydrogels and nanoparticles. However, our lab is currently actively searching for compounds off the ocean floor for oncological testing. Our cancer cell screening so far has revealed some interesting 'hits' and these are being pursued with chromatography-based fractionation, and ultimately, identification via mass spectrometry. We also intend to identify specific signaling pathways involved in cell cycling and apoptosis using techniques such as gene array analysis and immunoblotting. Specifically, the involvement of the growth-promoting kinases and cell death-inducing caspases will be examined. Some of this data and plans ahead will be discussed.

Biography

Dr. Crispin R. Dass has 17 years of drug delivery systems (DDSs) research experience, mainly focusing on cancer. He completed his secondary education in California, before moving to Australia for his tertiary education. He has worked on projects for Johnson & Johnson, GlaxoSmithKline, Amgen, and Novartis. He has 120 papers to date, with publications in Nature Medicine, Journal of the National Cancer Institute, Biomaterials and Journal of Controlled Release. He is currently on the editorial board of 4 other journals in his field, and has been invited to give keynote lectures at international conferences.