

# 2<sup>nd</sup> International Conference on Pharmaceutics & Novel Drug Delivery Systems

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

## TITLE

### **Synthesis, Bioactive attributes and Therapeutic Potential of Novel Derivatives of Nutraceutical Constituents of Selected Spices**

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Spice constituents e.g., Carvacrol in Oregano, Thymol in Ajowan, Zingerone from Ginger and Curcuminoids from Turmeric are all important nutraceuticals. They possess significant anti-oxidant, anti-microbial, anti-inflammatory and anti-carcinogenic properties. However, being lipophilic, these molecules per se have little solubility in aqueous systems. It was envisaged that covalent binding of these lipophilic molecules to compounds like sugars or amino acids could impart the desired solubility characteristics to these molecules. Accordingly, monosaccharide derivatives of curcumin, carvacrol and thymol have been synthesized by glycosylation approaches and their bio-active characteristics investigated. Also, several novel amino acid conjugates of curcumin and tetrahydrocurcumin have been prepared. It was observed that conjugation of the phenolic group of these molecules to a sugar or amino acid moiety rendered them water-soluble whilst retaining/enhancing many of their antioxidant, anti-mutagenic and antimicrobial attributes. Another interesting class of derivatives prepared was the quinoline derivatives of tetrahydrocurcumin and zingerone via trifluoroacetic acid catalyzed Friedlander reaction with acetophenone and substituted benzophenones. A brief account of the different synthetic approaches to the various novel derivatives of these important nutraceuticals and the effect of such derivatization steps on their bioactive attributes would be presented.

#### **Biography**

Pullabhatla Srinivas is currently the Head of Plantation Products, Spices and Flavour Technology Department of Central Food Technological Research Institute (CFTRI) at Mysore, India. He has over thirty years R & D experience in the area of Spices, Herbs, Plantation Products and Natural Colors. His Research Interests include isolation, analysis and synthesis of flavour chemicals & important food additives. His recent studies have laid special emphasis on isolation of nutraceutical constituents from spices, herbs and plantation products, their derivatization and determination of their bioactive attributes.