

3<sup>rd</sup> International Conference and Exhibition on

# Pharmacognosy, Phytochemistry & Natural Products

October 26-28, 2015 Hyderabad, India

## Design, development and characterization of naringenin loaded solid lipid nanoparticles for oral delivery

Snehal K Bhavsar, M G Sonawane, S S Chalikwar, A U Tatiya and J D Dani  
North Maharashtra University, India

Naringenin (NAR) is highly lipophilic drug having log P value 2.5. The poor orally available NAR only 8% oral bioavailability was successfully encapsulated in Compritol based Solid Lipid Nanoparticles (NAR-SLNs) for its ultimate use to target intestinal lymphatic transport system was prepared. Result showed that SLNs with mean particle size of 66.56 nm (polydispersity index, PDI=0.31) and surface electrical charge of approx. -12 mV, were produced by high pressure homogenization process. Response Surface Methodology (RSM) using the Central Composite Rotatable Design (CCRD) model was used to optimize formulations of NAR-SLNs. Particles were characterized using Differential Scanning Calorimetry (DSC), XRD and Scanning Electron Microscopy (SEM) to confirm their solid character and the homogeneous distribution of drug within the lipid matrix. *In vitro* release studies at pH 6.8 phosphate buffer (PBS) and % cumulative drug release of 94.97 at the end of 24 hours. The accelerated stability studies showed that there was no significant change in the mean particle size and PDI after storage at 25±2o C/60±5% RH for the period of three months. This study showed that the RSM-CCRD could efficiently be applied for the modeling of NAR-SLNs.

### Biography

S K Bhavsar has completed her MPharm (Pharmacognosy) from R C Patel Institute of Pharmaceutical Education and Research, Shirpur North Maharashtra University, Jalgaon. She was a University Topper and Gold Medalist in MPharm and she is currently pursuing PhD from the same institute.

[snehalbhavsar10@gmail.com](mailto:snehalbhavsar10@gmail.com)

Notes: