Pharmacognosy-2013
International Conference and Exhibition on
Pharmacognosy, Phytochemistry & Natural Products
October 21-23, 2013 Radisson Blu Plaza Hotel, Hyderabad, India

Phase I and Phase II metabolism studies of Kutkin (Isolated from *Picrorrhiza kurroa* rhizomes) using Rat liver microsomes and hepatocytes

Sheetal Anandjiwala

NIPER, India

Abstract

Pharmacokinetic evaluation is very important part of formulation development. Various *Ayurvedic* and herbal medicinal products are still used without any significant data regarding their pharmacokinetic profile. Kutkin, an iridoind glycoside mixture of Picroside I and II, is the bioactive principle of *Picrorrhiza kurroa*. *P. kurroa* is widely used in many *Ayurvedic* and herbal formulations like *Arogyavardhani Vati, Tikkadi Kwath Tiktadighrita*. *P. kurroa* is reported to be effective in many ailments viz. liver disorders, asthma, immunomodulation, cancer, inflammation etc.

A short, quick and high yielding isolation method for Kutkin (Picroside I and II) was developed. Isolated Kutkin was further characterized by Co-chromatography, UV, ^{1}H and ^{13}C NMR. In order to study the Phase I metabolism, hepatic microsome isolation was performed from *Sprague Dawley* rats for *in vitro* metabolic studies. Differential centrifugation method was utilized for the isolation of microsome. Isolated microsomes were stored at -80°C until the time of enzymatic activity assay. Isolated microsomes were characterized by measurement of total protein and CYP content. For Phase II metabolism, hepatocytes were isolated form rat liver.

LC/MS method was developed for analysis of Kutkin and identification of metabolites. LC/MS analysis was performed with Jasco AS 950 HPLC system coupled to Perkin Elmer ion-trap mass spectrometer with ESI source, operated in the positive-ion mode. Two metabolites, each for Picroside I and Picroside II were found in rat liver microsomes in addition to the parent drug. Eight and six metabolites of Picroside I and Picroside II respectively were found in Phase II metabolism study using hepatocytes.

Biography

Dr. Sheetal Anandjiwala completed her Ph.D. in Biosciences from South Gujarat University, Surat, Gujarat. She is currently a faculty in the Dept. of Natural Products at NIPER-Ahmedabad and is involved in teaching and guiding M.S. Pharm and Ph.D. students. She has won various awards for her research papers as well as for presenting papers at conferences and symposia. She has 25 publications in National as well as International peer reviewed journals, 61 monographs and 2 book chapters to her credit.