

## Influence of *Andrographolide* on STZ-induced osmotic and oxidative stress in hepatic tissues of sprague-dawley rats

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**Background:** *Andrographis paniculata* (Burm.f.) Nees (Acanthaceae) (AP), containing the major active principle, andrographolide (AG) has been used ethnomedically in the treatment of various diseases. In this context, we have evaluated the effects of Andrographolide on streptozotocin induced oxidative and osmotic stress in Sprague-Dawley rats.

**Objective:** To study the hepatoprotective efficacy of andrographolide on STZ induced diabetic hepatotoxic Sprague Dawley rats.

**Materials and Methods:** Thirty two Sprague-Dawley rats were taken and maintained under standard experimental conditions and were divided in to four groups, each contain eight rats. Group-I normal control, group-II STZ control and Group-III and IV STZ and treated with AG at 1.5mg, 2.5 mg/kg body weight. The study continued for ?? days and clinical chemistry parameters and oxidative enzyme activities were measured. Gross necropsy and histopathological changes between control and experimental groups were studied.

**Results and Conclusion:** Oral administration of AG reduced the oxidative stress, hepatic marker enzymes towards normalcy in a dose dependent manner. Liver steatosis is significantly reduced in AG treated rats. In conclusion, Andrographolide proved to be effective at both the doses and among the doses, the higher dose proved to be effective in reversing the streptozotocin induced alterations caused by oxidative and osmotic stress and ionic imbalances in the study. Andrographolide acts as potential molecule to treat the hepatic damage. The molecular mechanism behind the hepatoprotective activity of andrographolide is in progress.

### Biography

Ramavat Ravindar Naik Master's and Doctoral degree obtained from Department of Zoology, Osmania University, Hyderabad. He Joined in National Center for Laboratory Animals, National Institute of Nutrition (Indian Council Of Medical Research) in the year of 2000. He published several articles in reputed National and International journals and also given oral/poster presentations in national and international workshops, conferences, he also having 14 years experience in the field of animal breeding and maintenance. In addition to this he awarded prizes and awards for his work and presentations.

## Epigallocatechin-3-gallate protect milk protein against gamma irradiation

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The increased use of milk proteins in the medicinal domain requires development of efficient methods for sterilization of the milk preparations. Although many methods can be used to sterilize casein, sterilization in the absence of heat is preferred because high temperatures cause denaturation and aggregation of milk proteins. Ionizing irradiation can be a very powerful method to sterilize casein and can also reduce the allergenicity of milk proteins by the destruction of the human IgE-binding epitopes in protein allergens. Ionizing irradiation can damage protein. We demonstrated that the combination of gamma irradiation and green tea extract or ascorbic acid produce respectively additive and synergetic effects, providing acceptable hygienic quality of casein cow milk and protects the proteins against the ROS generated, during the irradiation process. Additional, we showed that  $\alpha$ - and  $\beta$ -casein irradiated separately more sensitive to gamma radiation than total casein. Also, we found that EGCG protect  $\alpha$ - and  $\beta$ -casein from degradation and subsequent aggregation probably by scavenging oxygen and protein radicals produced by the irradiation using SDS-PAGE and matrix-assisted laser desorption-ionization time-of-flight mass spectrometry (MALDI-MS) analysis. Although we used a polyphenol/protein ratio that was higher for  $\alpha$ -casein (1/5) than for  $\beta$ -casein (1/10), an improved protection by EGCG of  $\beta$ -casein was obtained. We found that a low concentration of EGCG (10  $\mu$ M) provide excellent radioprotection of caseins against dimerisation and aggregation especially for  $\beta$ -casein.

### Biography

Kouass Sahbani Saloua completed her first Ph.D. at the age of 32 years from Carthage University and she is pursuing second Ph.D. in Faculty of Medicine and Health of Sherbrooke, Sherbrooke University. She had published more than 3 papers in reputed journals and 3 chapters in 3 different books.