Purabi Sarkar et al., J Diabetes Metab 2015, 6:11
http://dx.doi.org/10.4172/2155-6156.C1.040

OMICS International
conferenceseries.com

7th Indo Global Diabetes Summit and Medicare Expo

November 23-25, 2015 Bengaluru, India

Dietary antioxidants induces differential gene expression of oxidative stress pathway genes in L6 cell line under diabetic condition

Purabi Sarkar and **Sofia Banu**
Gauhati University, India

Type-2 diabetes (T2D) is the most prevalent and serious metabolic disease all over the world. Oxidative stress caused by increased generation of reactive oxygen species (ROS) under hyperglycemia may contribute to the development of T2D. Therefore, cells have antioxidant networks to scavenge excessively produced ROS and antioxidants neutralize these ROS and decrease oxidative stress. The present study was designed to evaluate and compare the effect on oxidative stress pathway genes upon supplementation of antioxidants Resveratrol and Estragole in L6 cell line to combat diabetic stress conditions by qPCR system. In this study the results show up-regulation of GST and SOD gene in L6 cell lines treated with antioxidant alone, HNE+Antioxidant, Antioxidant+Insulin and HNE+Antioxidant+Insulin combinations. When compared with the control, Resveratrol+ Insulin treatment shows 2.48 folds up-regulation in GST gene and 2.28 folds up-regulation in SOD gene as compared to other treatment set. Similarly, Estragole also up-regulate GST expression by 2.15 folds and SOD expression by 2.34 folds in the Estragole+Insulin treatment set. In case of GPx gene, Estragole up-regulate by 0.60 folds in cells treated only with Estragole and Resveratrol show down-regulation of 2.04 folds in the HNE+Antioxidant treatment set. Whereas, CAT gene down-regulate by 3.22 folds in HNE+Antioxidant+Insulin treatment set for Estragole and Resveratrol up-regulate by 0.94 folds in only Resveratrol treatment. The study demonstrates that antioxidants Resveratrol and Estragole may be effective in combating ROS scavenging in patients with T2D. We have found Insulin alone can combat diabetes but its combination with dietary antioxidant perform better and are more effective.

Biography

Purabi Sarkar is currently pursuing her PhD in Biotechnology from Gauhati University under the supervision of Dr. Sofia Banu. She has completed her Masters in Biotechnology from Bengaluru University and Post Graduate Diploma in Advanced Clinical Research from ICRI, Bengaluru. She has worked as Research Trainee at R&D Centre, Indian Immunologicals Ltd, Hyderabad under the DBT-BCIL training program. She has published three article in International Journals (includes Elsevier publications) and 2 popular paper articles. She has presented her work in two international conferences and two national conferences.

purabisarkar7@gmail.com

Notes: