

5<sup>th</sup> International Conference on  
**HUMAN GENETICS AND GENETIC DISEASES**  
&  
11<sup>th</sup> International Conference on  
**GENOMICS AND PHARMACOGENOMICS**  
September 21-22, 2018 | Philadelphia, USA

**Association of the polymorphisms of GSTM1 and GSTT1 genes with DNA damage in the residents of an industrial area**

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Industrial air pollution has now become an important public health concern all over the globe. Exposure to the Industrial mutagens/ carcinogens is associated with the various diseases including cancer in man. Earlier studies have shown that these industrial pollutants may be metabolized by CYP (CYP3A5), Paraoxonase (PON1 and PON2) and GST (GSTM1 and GSTT1) enzymes. However, studies on genotoxic effects in residents of the industrial area with various genotypes of GSTM1 and GSTT1 are very limited. Thus the present study was designed to evaluate the association of polymorphisms of GSTM1 and GSTT1 genes with DNA damage in residents of the industrial area using single cell gel electrophoresis (SCGE). The extent of DNA damage was evaluated in the blood samples of 198 residents of Uppal, Mallapur and Nacharam industrial areas in Hyderabad who are likely exposed to industrial pollution and an equal number of residents from the non-industrial area (controls). Demographic data on age, sex, occupation, nature of work, details of their residence, medical history, living conditions, habits such as smoking, alcohol consumption was collected using a standard questionnaire. The polymorphisms of GSTM1 and GSTT1 genes were evaluated by Multiplex PCR. The results showed that residents of the industrial area showed a significantly increased DNA tail length (Mean±SE: 15.02±0.68) when compared to the residents (Mean ± SE: 1.1±0.14) from the non-industrial area (controls). The studies further showed that null genotypes of GSTM1 and GSTT1 were significantly associated with the increased DNA damage in the residents of the industrial area thus suggesting that residents with susceptible GSTM1 and GSTT1 are at a higher risk for DNA damage.

**Biography**

Prashanth Chiliveri has a good experience in molecular analysis, protein characterization and chromatographic analysis by emerging techniques and his area of interest is Human Toxicology, Heart Diseases, Raw and finished products and biosimilar characterization. He started his career at Central Institute for Cotton Research, Maharashtra, India and had gained good experience in characterization of proteins and development of Bio pesticide. He also worked as a Scientist at Vimta Labs Ltd., Hyderabad and worked on Biosimilar characterization. Currently he is a Researcher at Bhagwan Mahavir Medical Research Centre, Hyderabad and carrying research in Human toxicology and Heart Diseases. He published about 29 bacterial sequences in NCBI and 7 Research Articles in National and International Journals. He also involved in conducting many conferences and workshops at national level.

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