The present study was designed to evaluate the modulatory effects of lycopene against 7,12 Dimethylbenz (A) anthracene induced clastogenicity and oxidative stress in male Balb/c mice. The animals were divided into four groups; group I served as control (vehicle treated). Animals of group III and IV were administered lycopene orally at a dose of 4 mg/kg body weight for 10 weeks. Groups II and IV were administered DMBA, i.p., at a dose level of 40mg/kg body weight, 48hrs before the sacrifice of animals. Exposure to DMBA clearly induced hepatic cell injury as was evident by an increase in micronucleated cell score, lactate dehydrogenase and alkaline phosphatase activities, and Lipid Peroxidation levels. When the lycopene pre-treated animals were challenged with DMBA, a decrease in micronucleated cell score was observed, which was in corroboration with the observed decrease in LDH and ALP activities and LPO levels. DMBA treatment caused an increase in the oxidative stress with consequent alterations in enzymatic antioxidant defense system. Lycopene pre-treatment boosted the antioxidant defense in group IV. Thus, the antioxidant role of lycopene could be plausible in the protective action conferred by lycopene, enabling it to be used an effective natural free radical scavenger.

Keywords
Oxidative stress, Carotenoids, Micronucleus, Antioxidants.