Intracellular organization

P27-03-

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The present study was performed to investigate total sialic acid (TSA) and lipid bound sialic acid (LSA) levels as possible in vivo chemoprotective effect of borax (BX) and boric acid (BA) against3-Methylcholanthrene (3-MC) and benzo(a)pyrene (B(a)P) induced oxidative stress in rats. The rats were divided into nine groups of six rats each. Group I: Control, untreated animals were given % 0,9 NaCl, Group II: The B(a)P were administered 25 mg/kg via ip. four times. Group III: The 3-MC-treated animals were administered 25 mg/kg via ip. four times, Group IV: BA was given 300 mg/L/day with water. Group V: BX was given 300 mg/L/day with water. Group VI: B(a)P 25 mg/kg via ip four times + BA 300 mg/L/day dosage with water . Group VII: 3-MC 25 mg/kg via ip four times + BA 300 mg/L/day with water. Group VIII: B(a)P 25 mg/kg via ip four times + BX 300 mg/L/day dosage with water. Group IX: 3-MC 25 mg/kg via ip four times + BX 300 mg/L/day with water. The experimental period was continued for 150 days. Statistical analysis showed that the 3-MC + BA group was significantly higher than the control group with regards to TSA and LSA levels $p < 0.001$,$p < 0.05$, 3-MC and B(a)P groups were also significantly higher than the control group regarding LSA level $p< 0.001$, $p< 0.01$. B(a)P group had increased level of TSA according to BA,BX groups $p < 0.01$, $p < 0.01$, and LSA $p < 0.05$. 3-MC group had increased level of TSA according to BA, BX groups $p < 0.001$, $p < 0.001$, and LSA $p <0.01$, $p < 0.01$, 3-MC group had increased level of TSA according to B(a)P + BA, B(a)P + BX groups $p < 0.05$, $p < 0.001$, and LSA ($p < 0.05$), regarding B(a)P + BX and level of of TSA according to 3-MC + BX group ($p < 0.01$). Whereas, BA and BX groups had significantly lower level of TSA than B(a)P + BA and MC + BA groups $p < 0.05$, $p < 0.001$. It was determined that borax is more effective than boric acid in damage caused by 3-Methylcholanthrene and benzo(a)pyrene in rats.