Effect of Food Colorant Allura Red on Hematological Parameters of Swiss Albino Male Mice [†]

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† Presented at Environmental Toxicology: Impact on Human Health (Environ Tox 2021)

Abstract: Allura red is a food colorant synthetic azo dye disodium salt and soluble in water. Allura red is mainly used in dairy products, cotton candy, snacks, puddings, sauces, cereal, bakery products, orange soda, gelatins, drugs, and cosmetics. Food color can affect blood parameters, liver function, and antioxidant stress markers; with this aim, my present study was carried out to evaluate the effect of Allura red (food color) on male mice. Mice were divided into two groups. Group I: Control group received water, Group II: Allura red; 172 mg/kg of body weight. Doses were administered orally for 30 days, 45 days, and 60 days. Animals were sacrificed on 31st day, 46th day, and 61st day. Blood was collected and examined for the hematological parameter. Allura red treatment resulted in a significantly decrease in RBC, WBC, Hb, Hct, and platelet after 30 and 45 days. A very highly significant decrease in RBC, WBC, HGB, Hct, and platelet was observed after 60 days. The changes in values of MCV, MCH, and MCHC were non-significant when treated with Allura red as compared to control mice after different dose intervals. A low count of these parameters indicates infectious and anemic conditions in the body. The result indicates that mice treated with Allura red induce toxicity at 172 mg/kg of body weight.

Keywords: Allura red; hematological parameters; liver.

Conflicts of Interest

The authors declare no conflict of interest.