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Assessment of weekly weight changes pattern, relative organ weights and some hematological indices in male and female rats exposed to gasoline vaporsSaviour U Ufot¹, Friday E Uboh¹ and Uduak O Luke²¹University of Calabar, Nigeria²University of Uyo, Nigeria

Gasoline is one of the chemical substances whose vapors contribute ubiquitous chemical pollutants into the environment. This study assessed the sex-dependent effect of inhalation and whole-body exposure to gasoline vapors on weekly weight changes pattern, relative organ weights and some hematological indices of albino Wistar rats. In this study, male and female rats were exposed to vapors generated from direct evaporation of liquid unleaded premium motor spirit (PMS) blend of gasoline at concentration of $17.8 \pm 2.6 \text{ cm}^3 \text{ hr}^{-1} \text{ kg}^{-1} \text{ m}^{-3} \text{ day}^{-1}$, 6 h/day for 30 weeks, using previously reported standard method. The results showed that the levels of hemoglobin (Hb), haematocrit or packed cell volume (PCV) and red blood cells (RBC) counts in both male and female rats were reduced significantly, while the white blood cell (WBC) count increased significantly ($p < 0.05$) in females and insignificantly ($p > 0.05$) in male rats exposed to gasoline vapors. Also, the comparative percentage decrease in Hb, PCV, RBC were significantly higher ($p < 0.05$) in female than in male rats. Moreover, the percentage weight increase was significantly higher in males and lower in females, while the percentage growth rate decreased significantly ($p < 0.05$) in both male and female rats exposed to gasoline. Low Hb and PCV levels, and weight loss are known to be associated with anemic condition. It may therefore be concluded from the results of this study that inhalation and whole-body exposure to gasoline vapors may induce anemic condition in the gender-dependent pattern in rats, with females being more vulnerable.

Biography

Saviour U Ufot completed his B.Sc. in Biochemistry at the age of 22 from University of Calabar, Calabar, Nigeria, and M.Sc. in Pharmacology at the age of 24 years from University of Ibadan, Ibadan, Nigeria. He has worked as senior research officer (Bioremediation and Pollution Control) in Shell Petroleum Development Company of Nigeria from 1998 to 2002, Health Safety and Environment Specialist in Total E&P Nig. Ltd. since 2002. Presently, he is working on his Ph.D. in Biochemical Toxicology in the Department of Biochemistry, University of Calabar, Calabar, Nigeria, under the supervision of Prof. Eyony U. Eyong and Dr. Friday E. Uboh. Perfecto Barragan-Pena is currently a Professor at Instituto Tecnológico de Nogales, Mexico. He has a Doctorate in Environmental Sciences and has worked on sorption processes in both batch and dynamic systems, using natural adsorbents such as zeolites. Currently he teaches sustainable development and inferential statistics.

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