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Notice for the PhD Viva Voce Examination

Ms Aditi Chaudhary (Registration Number: 2071802), PhD scholar at the School of Sciences, CHRIST (Deemed to be University), Bangalore will defend her PhD thesis at the public viva-voce examination on Friday, 12 April 2024 at 10.30 am in Room No. 044, Ground Floor, R & D Block, CHRIST (Deemed to be University), Bengaluru - 560029.

Title of the Thesis	:	**Occupational Exposure to Cooking Oil Fumes: Biochemical, Cytogenetic and Molecular Signatures**
Discipline	:	**Zoology**
External Examiner (Outside Karnataka, Maharashtra and Uttar Pradesh)	:	**Dr K Karthikeyan** Principal Scientist and Head Gujarat Institute of Desert Ecology P B No. 83, Mundra Road Bhuj – 370001 Gujarat
External Examiner (Within Karnataka, Maharashtra and Uttar Pradesh)	:	**Dr Madhav Pralhad Bhilav** Professor Department of Zoology Shivaji University Kolhapur – 416004 Maharashtra
Supervisor	:	**Dr Manikantan P** Associate Professor Department of Life Sciences School of Sciences CHRIST (Deemed to be University) Bengaluru – 560029 Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva-voce examination.

Registrar

Place: Bengaluru
Date: 03 April 2024

ABSTRACT

Occupational exposure to Cooking Oil Fumes (COFs) is a widespread concern in the culinary industry, and it has raised significant health apprehensions due to its potential adverse effects on individuals working in kitchens. This current research presents a comprehensive analysis of the biochemical, cytogenetic, and molecular analysis observed in individuals exposed to COFs in their workplace. The study employed a cross-sectional approach, involving a cohort of kitchen personnel working in diverse culinary settings. Biochemical assessments focused on analyzing blood parameters, such as lipid profiles, liver enzymes, and markers of oxidative stress, to gauge the impact of COFs on the participants' systemic health. Cytogenetic investigations encompassed the assessment of chromosomal aberrations and micronuclei frequency in peripheral blood lymphocytes, shedding light on potential genotoxicity associated with COF exposure. Moreover, molecular analyses involved the examination of Apolipoprotein E (ApoE) and Brain and Muscle ARNT-like 1 (BMAL1) gene expression patterns related to inflammation, oxidative stress response, and detoxification pathways also this aspect aimed to uncover the underlying molecular mechanisms influenced by COFs.

Preliminary results suggest a significant association between COF exposure and alterations in biochemical parameters, particularly an increase in oxidative stress markers and changes in lipid profiles, indicative of potential cardiovascular risks. Cytogenetic assessments revealed an elevated frequency of chromosomal aberrations and micronuclei formation, highlighting genotoxic effects linked to COF exposure. Molecular investigations demonstrated differential expression patterns of ApoE and BMAL1 genes involved in inflammation and oxidative stress responses, further corroborating the adverse effects of COFs on cellular processes. The findings of this research underscore the importance of addressing occupational exposure to COFs and implementing appropriate safety measures in cooking area. Additionally, this research contributes valuable insights into the biochemical, cytogenetic, and molecular alterations associated with COF exposure, potentially aiding in the development of preventive strategies and health interventions for individuals working in these environments. Further research is warranted to elucidate the long-term health implications and refine preventive measures in the culinary industry.

Keywords: Cooking Oil Fumes (COFs); Cytogenetics; Circadian Biology; Gene specific mutation; Occupational Exposure and Health

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