भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Press Note

IIT Hyderabad Bio Researchers reveal neurotoxic nature of Triclosan an antimicrobial chemical used in soaps and dental care products

The study reveals that triclosan in minute amounts cannot only affect the genes and enzymes involved in neurotransmission, but it can also damage the neurons.

Hyderabad, December 15, 2020: Indian Institute of Technology Hyderabad's Dr Anamika Bhargava, Associate Professor at the Department of Biotechnology who led the research team, explained that triclosan even at amounts 500 times lower than the allowed limit can cause potent neurotoxic effects. ***Their research findings were recently published in a leading high-impact scientific journal, Chemosphere, published from the United Kingdom.***

To increase the shelf life of consumer products, companies add antimicrobial chemicals to stop the growth of unwanted microorganisms which may degrade the product and decrease its shelf life. ***One such chemical is Triclosan which is frequently added in consumer products available in India and worldwide such as soap, toothpaste, deodorants etc.*** Now one can find triclosan even in the kitchenware and clothes although its initial use in the 1960's was restricted to medical care products.

Generally, in very low amounts, Triclosan may be well tolerated by humans but the use of triclosan based products on a daily basis poses a big risk to humans in the long term.

Recently, the FDA reviewed the evidence against triclosan and imposed a partial ban on its use. However, India lacks any such regulation so far on the use of triclosan based products.

Talking about the study, Dr Anamika Bhargava, Associate Professor at the Department of Biotechnology, IIT Hyderabad said, *"In this study, the team of researchers investigated the effects of triclosan on the nervous system of developing zebrafish embryos. Zebrafish is an animal equivalent of humans, results from which have been well extrapolated to humans. The study reveals that triclosan in minute amounts cannot only affect the genes and enzymes involved in neurotransmission, but it can also damage the neurons. Overall this can affect the motor function of an organism."*

The presence of triclosan in human tissues and fluids may lead to neuro-behavioral alterations in humans, which may be further linked to neurodegenerative diseases. Neurodegenerative disorders of unknown origin appear to be on the rise and affect millions of people across the world. A suspected contributor for this is the complex interaction between genetic and environmental stressors. One such stressor could be triclosan.

This study suggests caution in the use of triclosan based products and perhaps it is time that triclosan use in India is banned or restricted.

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About IIT Hyderabad

Indian Institute of Technology Hyderabad (IITH) is one of the six new Indian Institutes of Technology established by the Government of India in 2008. In a short span of **12** years, the institute built on an imposing **570**-acre campus and has been ranked among the top ten institutes for four consecutive years in the National Institute Ranking Framework (NIRF) released by the Ministry of Human Resource Development (MHRD), Government of India. The Institute was also ranked under Top **#20** in the recent edition of Atal Ranking of Institutions on Innovation Achievements (ARIIA) introduced this year by MHRD to systematically rank all major higher educational institutions and universities in India on indicators related to 'Innovation and Entrepreneurship Development' among students and faculties.

IIT Hyderabad has close to **230** full-time faculty, **3,356** students of whom **20** per cent are women, nearly **200** state-of-the-art laboratories and five research and entrepreneurship centres. The Institute has a strong research focus with more than Rs. **500** crore of sanctioned research funding while PhD scholars account for about **30** per cent of total student strength. IITH students and faculty are at the forefront of innovation with more than **1,500** research publications and patent disclosures, **300** sponsored/ consultancy projects and **50** industry collaborations. IITH has MoUs with **50** universities in the U.S., Japan, Australia, Taiwan and Europe. IITH has been a pioneering change in pedagogy with fractal academic programs that atomizes course modules, encourage interdisciplinary learning, spanning innovative technology, fundamental science, liberal arts and creative arts like photography, theatre and painting.

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Please direct all media queries to:
Mrs. Mitalee Agrawal | Public Relations Officer, IIT Hyderabad
Cell: 8331036099 / Email: pro@iith.ac.in