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ASIA EDITION

Hong Kong links gut microbial enzymes with colon inflammation

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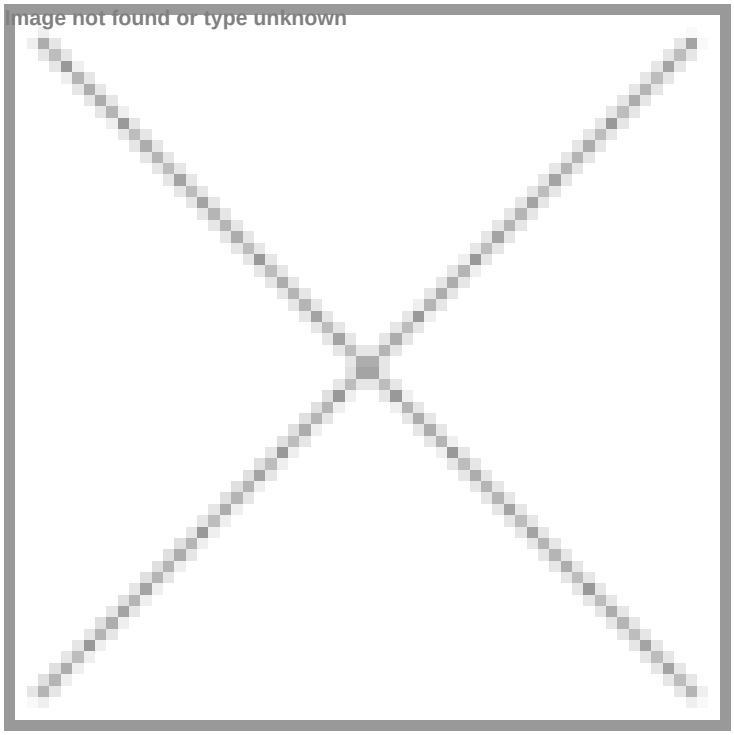
Specific gut microbial enzymes drive the conversion of triclosan metabolites to triclosan which increases the chance of developing colitis



A Hong Kong Baptist University (HKBU) collaborative research study has revealed that certain gut microbial enzymes mediate the reactivation of triclosan (TCS) from its inactive glucuronide metabolite. TCS is an antimicrobial agent commonly used in a wide range of consumer products such as toothpaste, mouthwash, hand sanitisers, cosmetics and toys, and it is associated with the development of colitis or inflammation of colon.

Once TCS enters the human body, it is rapidly metabolised to form the biologically inactive metabolite TCS-glucuronide (TCS-G), which is easily eliminated from the body. Due to this characteristic, the mechanism of how environmental exposure to TCS leads to gut toxicity in the human body has previously remained unclear.

To answer this question, a researchers have now conducted a study based on the hypothesis that certain gut microbial enzymes act on TCS-G in the gut, leading to the reactivation of TCS and the subsequent development of colitis.

The researchers said: “Our research results clearly defined the mechanism by which gut microbiota are involved in the metabolism and toxicology of TCS, and the study offers a way to prevent the development of colitis following environmental exposure to chemicals.

“Regulatory bodies should consider imposing more stringent controls on the use of TCS. Although the US Food and Drug Administration (FDA) banned the marketing of TCS in over-the-counter antiseptic products in 2016, the chemical remains

approved for use in a wide range of products. Transparency on TCS ingredients in product labelling and illustrations should also be improved so that consumers can be aware of the potential risks and make informed choices.”