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EXPERT OPINION

The safety of 3-monochloropropane-1,2-diol (3-MCPD) and glycidyl fatty acid esters (GEs)

Background Information

- 3-MCPD and GEs are process contaminants which can form during food processing under high temperature[1-3]
- 3-MCPD and glycidol (a compound released after digestion of GEs) have been classified as potentially carcinogenic based on experimental data in animals, and no human data was available at the time of evaluation[4,5]
- A recent local study tested samples of infant formulas on the market and found varying levels of 3-MCPD and GEs[6]

GC: In the local study, 3-MCPD was detected in all products with only one of them containing a 3-MCPD level that may exceed the Tolerable Daily Intake (TDI) set by the European Food Safety Authority (EFSA) under normal consumption, while **the GEs level of all products are within the European Union's maximum level** [6-8]

GC: **The risk of the normal consumption of products with 3-MCPD and GEs levels under the guided level are within acceptable range** according to the best available scientific evidence

Any health implications regarding the levels of 3-MCPD and GEs found?

Advice for the general public and parents in relation to the recent infant formulas study?

GC: In line with the government's advice, **mothers are strongly encouraged to feed their babies with breast milk** as breastfeeding is associated with a wide range of benefits to babies and mothers

GC: **Switching among different infant formulas with both 3-MCPD and GEs levels under the guided level might not achieve noticeable advantage** to infants' health

GC: When breastfeeding is not possible, infants should continue to be fed with commercially produced infant formula to ensure optimal nutrition

GC: If parents decide to change the infant formula, they would be recommended to consult doctors or dietitians for advice and do it with caution to avoid possible intolerance

References: 1. Hong Kong Centre for Food Safety. Fatty acid esters of 3-monochloropropane-1,2-diol (3-MCPD) in food. 2012. 2. Hong Kong Centre for Food Safety. Glycidyl esters, a harmful substance, in refined fats and oils. Available at: https://www.cfs.gov.hk/english/multimedia/multimedia_pub/multimedia_pub_fsf_142_01.html. Accessed on 18Aug2020. 3. Food and Agriculture Organization of the United Nations. Code of Practice for the Reduction of 3-Monochloropropane-1,2-diol Esters (3-MCPDES) and Glycidyl Esters (GEs) in Refined Oils and Food Products Made with Refined Oils. 2019. 4. IARC. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 77. 2000. 5. IARC. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 101. 2018. 6. Hong Kong Customer Council. Choice. 2020;(8):526. 7. European Food Safety Authority. Revised safe intake for 3-MCPD in vegetable oils and food. 2018. Available at: https://www.efsa.europa.eu/en/press/news/180110. Accessed on 18Aug2020. 8. European Union. Commission Regulation (EU) 2018/290. 2018.