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Abstract

Traditionally, fish is considered as the major source for humans exposed to methylmercury (MeHg), which is a highly toxic contaminant, -however recent study has shown that consumption of rice could be another MeHg exposure pathway to human beings. To evaluate the potential health risk caused by consumption of rice and rice product containing MeHg, not only amount but also the bioaccessibility of MeHg in rice and rice products are required, because the amounts of methylmercury in samples is an overestimate and does not provide the accurate fraction that is mobilized from the food source. An in vitro digestive method was used to mimic the conditions of inside the stomach and intestines, then mobile MeHg was analyzed by using GC-AFS in this study to estimate the bioaccessibility of MeHg in both rice and fish samples. For rice samples the amount of methylmercury ranged from 1.2-13.9 ppb, the bioaccessible fraction ranged from 18-74 %. For fish samples the bioaccessible fraction ranged from 11-55 %. The invitro digestive method is able to determine the bioaccessibility in rice and fish in order to evaluate risk assessment.