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Studies on Mineral Contents and Intake Ratio of Commercial Infant Formula.

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The study was conducted to investigate the concentration and infants' intake of the major minerals such as calcium, phosphorus, sodium, magnesium and chloride and of the micro minerals such as iron, zinc and copper from 11 commercial infant formulas.

The Ca, P, Mg, K, Na, Cl, Fe, Zn, Cu contents per 100g of infant formula for 0-5 monthly age were 394, 244, 43, 488, 160, 348, 5.8, 2.9, 0.33 mg, respectively. The Ca, P, Mg, K, Na, Cl, Fe, Zn, Cu contents per 100g of infant formula for 6-11 monthly age were 584, 354, 45, 648, 199, 355, 7.4, 3.1, 0.34 mg, respectively. The Ca, P, Mg, K, Na, Cl, Fe, Zn, Cu contents per 100 Kcal of infant formula for 0-5 monthly age were 76.2, 47.5, 8.3, 94.3, 30.9, 67.4, 1.1, 0.58, 0.06 mg, respectively. The Ca, P, Mg, K, Na, Cl, Fe, Zn, Cu contents per 100 Kcal of infant formula for 6-11 monthly age were 115.3, 70.1, 9.0, 127.2, 39.3, 70.4, 1.5, 0.6, 0.07 mg, respectively. On comparing the intake ratio of mineral, the average of Ca/P and Ca/Mg ratio of infant formula for 0-5 and 6-11 monthly age were 1.7:1, 12:1 and 1.7:1, 10:1, respectively. The average ratio of Zn/Cu of infant formula for 0-5 and 6-11 monthly age were 9:1 and 9.3:1, respectively. The estimated daily mineral intake for infants were compared and discussed with KDRI(2005).

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Characterization of Recombinant Soluble Epoxide Hydrolase of Zebrafish, *Danio rerio*

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Epoxide hydrolases (EHs, EC 3.3.2.3) have three main functional roles; detoxification, synthesis of signal molecules, and metabolism which allows some bacteria to use epoxides as carbon sources. EHs catalyze the net addition of a water molecule to an epoxide, resulting in a vicinal diol as the sole product. Recently, EHs have gained increasing attention due to their potential for kinetically resolving epoxide enantiomers and thus serving as selective catalysts in the industrial production of enantiomerically pure chemicals. We cloned Zebrafish sEH gene in pColdI vector and transformed into *E. coli* strain BL21(DE3). In this report, we characterized this recombinant *E. coli* for the cell growth and EH activity. And also, we investigated enzyme stability, substrate specificity and the effects of temperature and pH on the EH activity. This work was supported by the Marine and Extreme Genome Research Center Program, Ministry of Marine Affairs and Fisheries, Korea