Blood concentrations of polycyclic musks in healthy young adults.

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Abstract

Knowledge on the concentration of polycyclic musk fragrance compounds in human blood is sparse. This study examined the concentrations of six polycyclic musks in blood samples from healthy volunteers. Blood was taken from hundred healthy students of the Medical University of Vienna. The lipophilic fraction was extracted and after purification analyzed by GC-MS. Study participants also completed a questionnaire on the use of cosmetics, about nutrition and other life-style aspects. Two compounds -- galaxolide and tonalide -- were identified in higher percentages of the blood plasma samples. Maximum plasma levels over 100 ng/l were also only found for galaxolide (4100 ng/l) and tonalide (800 ng/l). Women showed significantly higher levels than men. In a statistical multivariate approach only use of body lotion and age were predictive of positive galaxolide concentrations. For tonalide no significant predictor could be found. The findings mirror the replacement of nitro musk fragrances by polycyclic musks, mainly galaxolide. The high concentrations of galaxolide in human blood raise concern since few toxicological data are available.

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