

Baby bathwater contains fragrance allergens

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A team of scientists from the USC has developed a method to detect and quantify the 15 most common fragrance allergens included in soap, gel, cologne and other personal hygiene products. Credit: Llompart et al./SINC

A group of chemists from the University of Santiago de Compostela (USC, Spain) has developed a method to quantify the fragrance allergens found in baby bathwater. The researchers have analysed real samples and detected up to 15 allergen compounds in cosmetics and personal hygiene products.

A team of scientists from the Department of [Analytical Chemistry](#), Nutrition and Bromatology at the USC has developed a method to detect and quantify the 15 most common fragrance allergens included in soap, gel, cologne and other personal hygiene products.

"Applying the method to eight real samples obtained from the daily

baths of a series of [babies](#) aged between six months and two years old, we discovered the presence of all the compounds under study in at least one of the samples," co-author of the study published this month in *Analytical and Bioanalytical Chemistry*, María Llompart, explained to SINC.

The scientists found at least six of the 15 compounds in all the samples. In some cases, concentrations were "extremely high", exceeding 100ppm (parts per million = nanograms/millilitre). Some of the substances that appeared were benzyl salicylate, linalol, coumarin and hydroxycitronellal.

"The presence and levels of these chemical agents in bathwater should be cause for concern," Llompart said, "bearing in mind that babies spend up to 15 minutes or more a day playing in the bath and that they can absorb these and other chemicals not only through their skin, but also by inhalation and often ingestion, intentional or not."

New Method to Detect Fragrances

Allergens were able to be detected due to the high level of sensitivity of the method, which for the first time applies the Solid-Phase Micro Extraction (SPME) technique to determining the ingredients of cosmetics and child hygiene products. This technique makes it possible to concentrate and isolate chemical components from a sample by absorbing them into fibres with a certain coating.

The researchers have also employed gas chromatography to separate compounds and mass spectrometry to identify and measure the abundance of each of the fragrances.

European regulations stipulate that the presence of such substances should be indicated on the label of the product when levels exceed a

certain limit (0.1 or 0.01%, depending on the type of compound), but some associations believe these limits are excessively tolerant, particularly where child hygiene and baby and child care products are concerned.

More information: J. Pablo Lamas, Lucia Sánchez-Prado, Carmen Garcia-Jares y María Llompart. "Solid-phase microextraction gas chromatography-mass spectrometry determination of fragrance [allergens](#) in baby bathwater". *Analytical and Bioanalytical Chemistry* 394 (5): 1399-1411, julio de 2009.

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