



Analysis of plant and marine products by using (low-)flow modulated comprehensive 2D gas chromatography-mass spectrometry.

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One of the major limitations of current-day flow-modulated comprehensive two-dimensional gas chromatography (FM GC×GC) is the generation of high gas flows (e.g., 20 mL/min) in the second analytical dimension. Even though such high flows are necessary to efficiently flush the content of the modulator onto the second dimension, they also greatly restrict the employment of mass spectrometry (MS). One way to enable the use of MS systems, in FM applications, is to divert a substantial part of the second-dimension flow to waste. It is obvious that such a choice has a negative impact on sensitivity. The present contribution is focused on the development of high sensitivity methods using flow-modulated comprehensive two-dimensional gas chromatography-mass spectrometry. Specifically, an FM GC×GC-MS approach was developed in which the flows necessary to efficiently flush the modulator were greatly reduced. Consequently, there was no need to divert flow to waste. The efficiency of the set-up is demonstrated on fish oil fatty acids and a sample of Artemisia essential oil.

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