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Application News

No.L470

High Performance Liquid Chromatography

Analysis of Kakkonto by Nexera-e and SPD-M30A Photodiode Array Detector (Part 2)

Kakkonto is a mixture of several traditional Chinese medicines. Type of compounds and their contained amount vary due to their origin.
Here, we compared 2D contour plots of four kinds of kakkonto obtained by the Nexera-e comprehesive two-dimensional chromatograph detecting at UV 254 nm. Fig. 1 shows 2D contour plots created by the dedicated software ChromSquare. Multiple peaks were observed on each chromatogram.

When there are differences on comparison, a zoomed display and overlay of two 2D contour plots are available to conduct a differential analysis and compare them in detail. A 3D display is also available for checking the separation more visually. In this example, differences were observed between sample A and C (please see the black frames), which were not observed only by one-dimensional analysis. Detailed comparison is shown on the next page. Regarding sample pretreatment and analytical conditions, please refer to the previous application news No.L469.
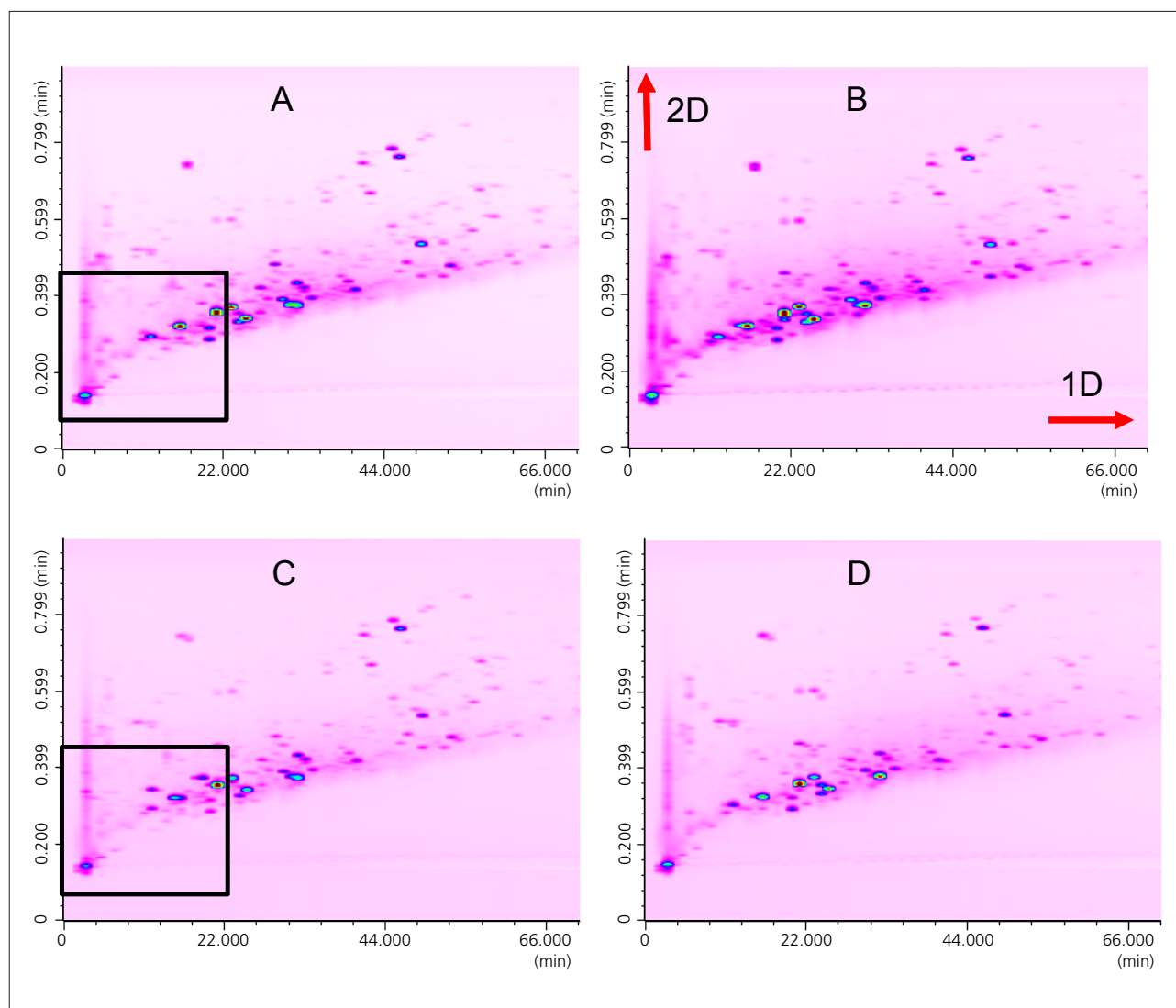

Fig. 1 Comparison of Comprehensive 2D-plots of Four Kakkonto Products

Fig. 2 shows zoomed displays of the black frames in Fig. 1, an overlay of them, and a 3D display. These display methods help to verify the differences. A peak (red arrow in Fig. 2) was observed in sample C, while it was not in sample A.

The 2D analysis enables confirmation of comprehensive separation and profiling of complicated samples. It will be useful for quality control and help to narrow down target compounds for study by differential analysis.
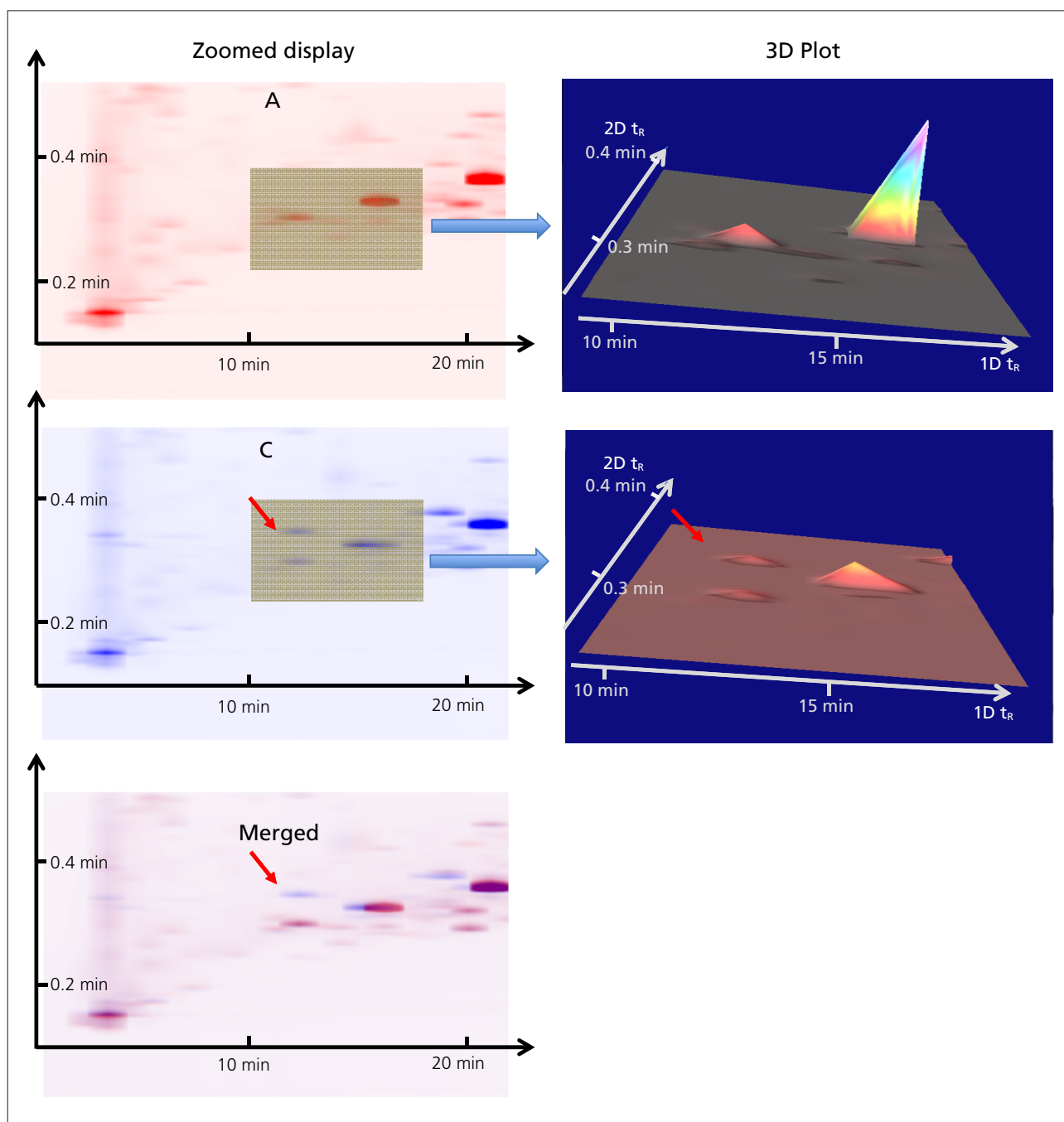

Fig. 2 Differential Analysis Between Sample A and C

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