

The more improvement of the sample enrichment by a microfluidic dialysis device

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We have developed a microfluidic integrated chip with all the fluidic manipulation required for biological sample separation. Miniature, microfluidic devices have been designed and fabricated for the enrichment of biological sample. The microfluidic chip using the processing of the semiconductor fabrication was constructed for rapid microdialysis cleanup and enrichment of biological samples for analysis by HPLC(High Performance liquid chromatography). Signal-to-Noise ratios were also greatly enhanced compared to direct infusion of original nondialysis sample. Also the sensitivity of detection by HPLC is improved through enrichment of biological sample. The effectiveness of the cleanup was attributed to the size difference between the sample channel and the buffer channel and the fact that the sample is continuously refreshed by the buffer counterflow.