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**B7 Direct-Immersion Solid-Phase
Microextraction (SPME) and
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for Detection of Benzodiazepines
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Benzodiazepines are one class of common drugs leading to intoxication. These drugs and their in vivo metabolites can be hydrolyzed in acid to the corresponding benzophenones, which are easier to be separated and determined. In this presentation, we have tried to develop a new method for separation and determination of benzodiazepines in urine.

[Method] Benzodiazepines spiked in urine were hydrolyzed at 100°C for 40 min, in the presence of 4 mol/L HCl. The hydrolytic mixture was adjusted to pH 9.4 and extracted at ambient temperature for 30 min with a polydimethylsiloxane fiber. Benzophenones adsorbed to the SPME fiber were desorbed and determined by GC-ECD.

[Results and discussion] The recoveries of 9 benzodiazepines ranged from 1 to 25%. Their calibration curves were linear from 10 ng to 500 ng/mL; except for that of bromazepam (80 to 1000 ng/mL). The detection limits were 2-80 ng/mL. The intra-day and inter-day CVs were within 10% and 17%, respectively. The method was applied to determine a benzodiazepine in the urine of a male volunteer, who had taken a therapeutic dose of 1.2 mg of flunitrazepam.