

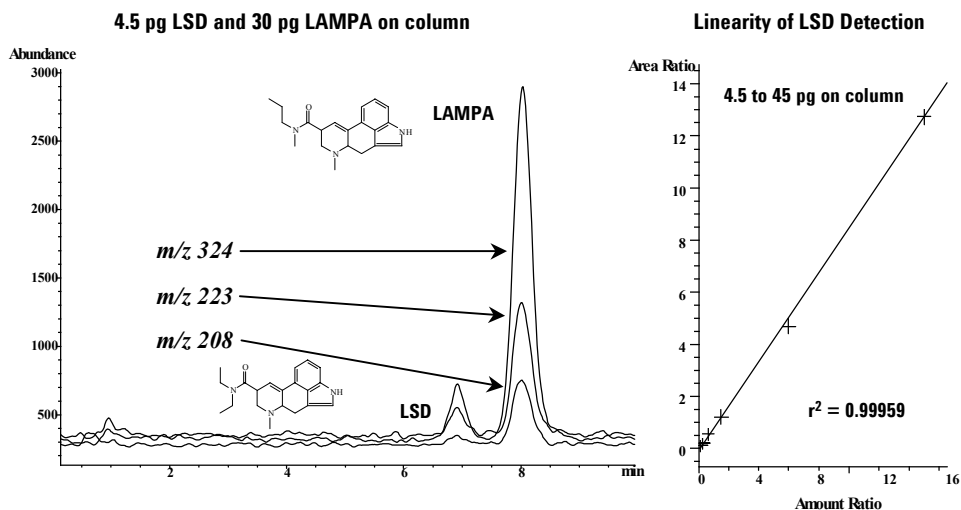
# LSD Limit-of-Detection by LC-MS

Application  
Forensic Toxicology  
Robert Ricker

The detection of LSD-abuse is difficult because of its efficacy at extremely low dosages. The drug is also rapidly excreted, dropping to urine concentrations of < 200 pg/ml after 12 hours. LAMPA (lysergic acid methylpropylamide) has the same molecular weight as LSD and is used as an internal standard. The rapid separation and analysis of these two compounds by LC-MS is, therefore, of considerable importance. The limit and linearity of detection are demonstrated below.

## Highlights

- A rapid isocratic separation has been developed for LSD and the internal standard LAMPA. These compounds are eluted from the ZORBAX Eclipse XDB-C8 column with good peak shape.
- ZORBAX Eclipse XDB columns have extremely good peak shapes over a broad pH range, including the pH 7 range.
- This LC method is optimized for API-ES-MS.
- Sensitivity of the LC/MS is excellent with standards (LOD is about 4.5 pg on column), and the method is legally defensible since it includes 2 confirming ions.



Conditions: Instrument: Agilent 1100 LC/MSD System  
Column: ZORBAX Eclipse XDB-C8, 2.1 x 50 mm, 5 $\mu$ m, Agilent P/N: 960967-906  
Mobile Phase: 15 : 85, ACN : H<sub>2</sub>O containing 10 mM ammonium formate, pH 3.7  
F=0.3 mL/min, Inj vol: 30  $\mu$ l, Temp: 30°C, Det. MS  
HP 1100 MSD Conditions: SIM mode, Ions: 324.2, 223.1, 208.1  
Fragmentor (dynamically ramped) 100V at 324.2, 148V at 223.1, 170V at 208.1



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