

'...HPLC with isocratic elution and UV detection offers a simple but effective alternative...'

Polynuclear Aromatic Hydrocarbons with UV Detection

The analysis of organic pollutants in a range of environmental samples has become a priority in recent years. Persistent toxic compounds with known or suspected carcinogenic properties such as the polycyclic aromatic hydrocarbons, commonly called PAHs or PNAs, have received special attention. PAHs are widely distributed and have been detected in numerous situations, including sea water, drinking water, cigarette smoke, cooking oils and soil samples from industrial sites.

High sensitivity detection is required for the analysis of PAH pollutants as levels are usually low, especially in aqueous samples. HPLC with fluorescence detection is the method of choice for such analyses because it provides both the high sensitivity and high specificity needed, and is considered to be superior to gas chromatography for this application (Reference 1). For most purposes, however, HPLC with isocratic elution and UV detection offers a simple but effective alternative, as shown in Figure 1, where the separation of 15 EPA Priority Standards is displayed.

Keywords:

Carcinogens, Environmental Pollution, Polynuclear Aromatic Hydrocarbons, PAHs, PNAs, UV Detection

Conditions

Column: Chromspher PAH 5 μ m, 200 x 3.0 mm ID
 Guard: Spherisorb S5 ODS2, 50 x 4.6 mm ID
 Mobile Phase: Acetonitrile/Water (78:22)
 Flow Rate: 1 ml/min
 Detection: UV at 280 nm
 Temperature: 30°C

Reference

1. P. Jandera and J. Churacek, in 'Gradient Elution in Column Liquid Chromatography' (Elsevier, 1985), p.293.

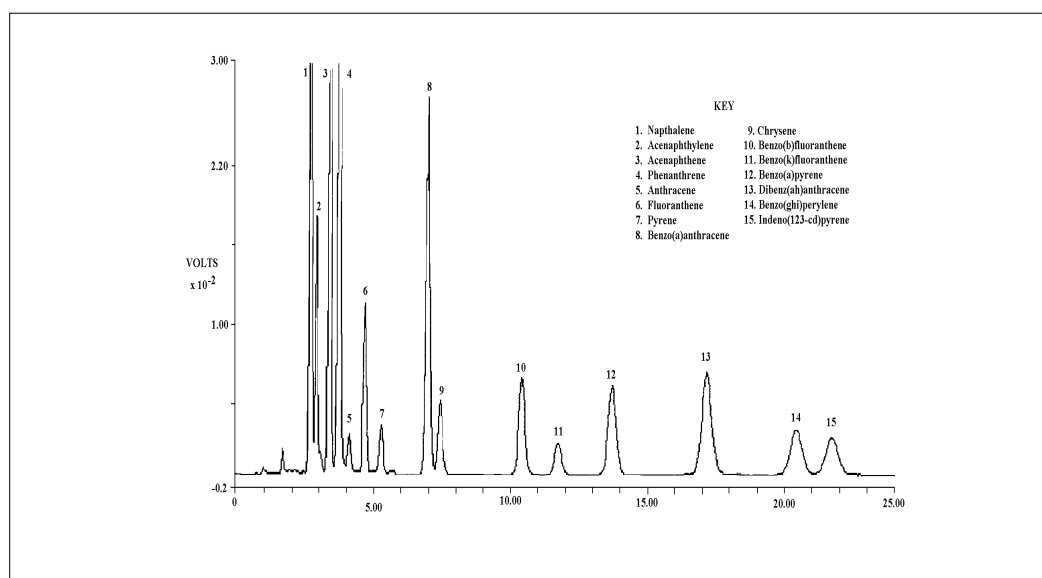


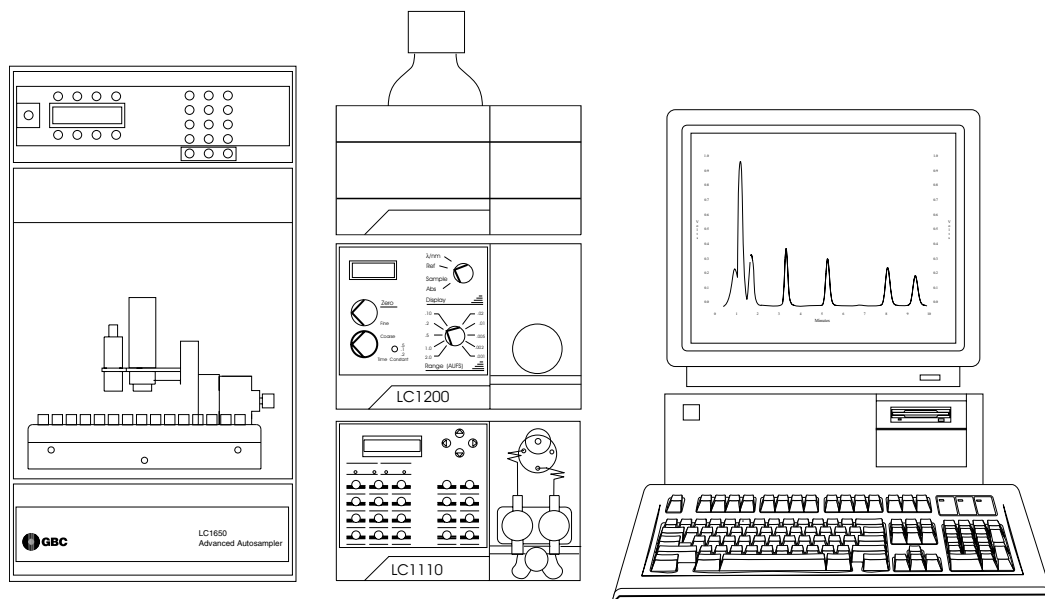
Figure 1 Polynuclear Aromatic Hydrocarbon Standards



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GBC HPLC Instrumentation

LC1110 Dual Piston HPLC Pump
LC1200 Variable Wavelength UV/Vis
Detector
LC1445 System Organiser
LC1650 Advanced Autosampler
GBC Column Heater
WinChrom Chromatography Data
Management System



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