



NOTE NO. 19 - May 25, 1987

DRUG SENSITIVITIES WITH THE PINKERTON ISRP COLUMN: STATE OF THE ART.

Actual sensitivities that can be obtained with ISRP columns depend on the particular drug to be detected. However, we can in general state the following, regarding the current state of the art (the "Level designations are ours, and arbitrary):

Sensitivity Level I: With Pinkerton ISRP columns, standard 254-nm UV absorption detection, and standard 10-microliter injections, most drugs can be determined in serum at around 1 to 10 micrograms per milliliter of serum.

Sensitivity Level II: With UV absorption at more favorable wavelengths (implying use of a variable wavelength UV-absorption detector), sensitivities improve by about 10--detectibilities reach 100 to 1,000 nanograms per milliliter.

Sensitivity Level III: Adding an additional switching valve to this equipment (and thus, a concentrator column--as described in Application Notes 14 and 14a) and injecting 100 microliters of serum improves sensitivities by another factor of 10--detectibilities reach 10 to 100 nanograms per milliliter.

Sensitivity Level IV: With suitable drugs, ultra-sensitive detectors such as fluorescence or electrochemical can improve sensitivities by factors of 1,000--detectibilities reach 10 to 100 picograms per milliliter; some users are operating at these levels.

Sensitivity level	Detection method	Microliters injected	Concentrator column	Weight/ml detected
I	254 UV	10	No	1 to 10 ug
II	Var UV	10	No	100 to 1000 ng
III	Var UV	10-100	Yes	10 to 100 ng
IV	Ultra*	10-100	Yes	10 to 100 pg

* Fluorescence or electroanalytical