

Occluded Solvent Analysis as a Basis for Heroin and Cocaine Sample Differentiation

REFERENCE: Cole MD: Occluded solvent analysis as a basis for heroin and cocaine sample differentiation; *Forensic Sci Rev* 10:113–120; 1998.

ABSTRACT: Literature reports concerning the analysis of occluded solvent as a basis for determining whether “the [cocaine and heroin] samples have a common origin” are reviewed. Common procedures involve headspace sampling and gas chromatographic methods using various columns with mass spectrometric or other detectors. Nuclear magnetic resonance spectrometry has also been used. It is possible to (a) identify which solvents have been used in the production of a particular batch; (b) determine the relationship of drug samples; and (c) quantitatively assess the distribution of solvent through a large block of drug. However, a minimum number of three solvents are required before reliable matches might be called and even then the matches in solvent composition may not be confirmed in subsequent analyses. Thus, the analysis of occluded solvents in heroin and cocaine samples can be a useful contribution to establishing the relationship of drug samples to each other, but other methods of comparison are still required. The analysis of occluded solvents acts as a supplement to other comparative methods, rather than as a replacement.

Key Words: Cocaine, heroin, profiling, signature, solvent.
