

# Testing for Drugs of Abuse in Hair — Experimental Observations and Indications for Future Research

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**REFERENCE:** Rollins DE, Wilkins DG, Gygi SP, Slawson MH, Nagasawa PR: Testing for drugs of abuse in hair — Experimental observations and indications for future research; *Forensic Sci Rev* 9:23–36; 1997.

**ABSTRACT:** The testing of hair for drugs of abuse is gaining popularity primarily due to the possibility that hair concentrations of drugs will reflect drug exposure for a longer period of time than either plasma or urine. Data produced by experimental research, rather than those resulting from anecdotal observations, uncontrolled research, or irrelevant experimental models, will be more likely to prove whether this is true and to determine whether drug concentrations in hair can be accurately interpreted in relation to drug dosage. Experimental observations have established that: (a) parent drug concentrations in hair are generally greater than their metabolites; (b) chemical structure of the drug is important in determining its incorporation into hair; (c) pigmentation of hair plays an important role in determining drug incorporation. Data resulting from models (including animal models, in vitro models, transplantation of human hair onto athymic mice, and human subjects) designed for studying hypotheses concerning the mechanism of drug incorporation into hair are also reviewed.

**KEY WORDS:** Cocaine, codeine, hair, heroin, marijuana, nicotine, pigmentation.

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