

# Analysis of Drugs of Abuse in Saliva

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**REFERENCE:** Samyn N, Verstraete A, van Haeren C, Kintz P: Analysis of drugs of abuse in saliva; *Forensic Sci Rev*; 11:1-19; 1999.

**ABSTRACT:** Saliva is presented as an alternative matrix in the establishment of drug abuse. The ultimate salivary concentration is determined by the route of administration, the salivary pH, the degree of plasma protein binding, and the physico-chemical properties of the abused drug. Since the saliva/plasma ratio can exceed 1, saliva might be a better analytical tool than blood during roadside testing of potentially intoxicated drivers. Moreover, saliva can be obtained non-invasively and under supervision. Although drugs of abuse have been determined in saliva for more than a decade, the use of saliva drug testing for forensic purposes is still limited. Several problems have been demonstrated: (a) differences in the collection protocol produce variable results and often, e.g., during roadside testing, only very small volumes of saliva are obtained; (b) the salivary concentrations are much lower than in urine; (c) saliva principally contains the parent drug and until now, no suitable immunoassays have been commercialized. Although salivary drug concentrations are well correlated with pharmacological effects for some drugs, e.g., cocaine, further studies have to prove whether saliva is a suitable matrix to demonstrate "driving under the influence" of psychoactive drugs. Furthermore, an on-site screening assay for drugs of abuse in saliva and the establishment of appropriate cutoff levels should facilitate the use of saliva during roadside testing.

**KEY WORDS:** Amphetamines, cocaine, marijuana, opioids, saliva, saliva applications, saliva collection, saliva physiology.

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