

THE FORENSIC IMPORTANCE OF METABOLITES

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After consumption, most of drugs and narcotics are excreted with urine in an unchanged form. In many cases, the period of detection may be enlarged by measuring metabolites. E.g., the half-life time of benzoylecgonine, which is one of the main metabolites of cocaine, is markedly longer than the half-life time of the mother molecule. Therefore, it is traceable even days after consumption. The quantitative determination makes it possible – supposing an average dose – to closely determine the time-point of consumption. From this aspect, the measuring of benzodiazepines, might be misleading. 7-amino-clonazepam (metabolite of clonazepam), which shows sawtooth-like elimination curve is a good example.

Measuring of metabolites conjugated with glucuronic acid is generally accomplished after hydrolysis in free form (e.g. opiates, THC-OH or THC-COOH). In case of synthetic cannabinoids, the mother molecule, as well as the metabolite, frequently conjugate with glucuronic acid, thus, these are normally detected after glucuronidase enzyme cleavage or after alkaline hydrolysis.

Since these derivatives are present in humors in low concentration and they metabolise quickly, the verification of narcotic consumption can be really effective, when the presence of metabolites is verified.