K8 Amphetamine and Methamphetamine Excretion Following Administration of Multiple Doses of the Drug Gewodin®

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Following this presentation, individuals will be able to assess urine levels of amphetamine and methamphetamine for consistency with use of this medication.

Several drugs are known to be metabolized by the body to methamphetamine and/or amphetamine that are subsequently excreted in the urine. Such drugs raise concerns with interpretation of positive amphetamine drug testing results. Gewodin (Geistlich, Wolhusen, Switzerland) is a multi-ingredient medication used for pain relief. The drug contains acetominophen, caffeine, isopropylphenazone and famprofazone. The drug is available in European countries, such as Germany but is not marketed in the U.S. Famprofazone acts as an analgesic and is the component metabolized to methamphetamine and amphetamine.

Two tablets (50 mg of famprofazone) were administered orally to five volunteers with no history of amphetamine, methamphetamine or famprofazone use. Six hours following the initial dose, a second dose was administered to each subject. This was followed on the second day by administration of two additional doses, effectively administering additional doses of the drug at six, 24 and 30 hours after the initial dose. Urine samples were collected pre-dose and then ad lib after the initial dose and continued for up to seven days following the last (fourth) dose of the drug. Urine pH, specific gravity, and creatinine values were determined on all samples as was the concentration of amphetamine and methamphetamine. Drug concentrations were determined by gas chromatography/mass spectrometry (GC/MS) following liquid/liquid extraction and derivatization with heptafluorobutyric anhydride.

A previous study using a single 50 mg dose of famprofazone showed peak concentrations for amphetamine ranged from 148 - 2,271 ng/mL and 614 - 7,361 ng/mL for methamphetamine with peak concentrations of both compounds 3 - 14 hours post-dose. Using a cutoff of 500 ng/mL, all five subjects in that study had individual urine samples that tested with some of the positive samples being detected over 48 hours post-dose. The current study found peak concentrations of 5,327 - 14,154 ng/mL for methamphetamine and 833 – 3,554 ng/mL for amphetamine. Positive samples were seen for several days following the last administration of the drug.

Interpretation of results is a critical part of forensic drug testing due to the potential repercussions to an individual. As demonstrated by the current study, a positive amphetamine test does not necessarily indicate illicit drug use. Evaluation of results with regard to those found in this study will assist in determination of the possible use of this medication as the source of methamphetamine and amphetamine, particularly when multiple administrations of the drug are alleged.

Famprofazone, Amphetamine, Methamphetamine

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