

Department of Clinical Laboratory Sciences

Graduate Masters Theses

Metabolic Profile Of Famprofazone Following Multidose Administration.

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ABSTRACT

Several drugs are known to be metabolized 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 acetaminophen, caffeine, isopropylphenazone and famprofazone. The drug is available in European countries, such as Germany but is not marketed in the United States. 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 well as the concentrations and enantiomer ratios of amphetamine and methamphetamine. The drug concentrations and enantiomer ratios were determined by gas chromatography/mass spectrometry (GC/MS) following liquid/liquid extraction and derivatization with heptafluorobutyric anhydride or N-trifluoroacetyl-*l*-prolyl-chloride, respectively. Administration of famprofazone resulted in excretion of methamphetamine and amphetamine in sufficient quantity to produce positive drug testing results. 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.