
Preface

Since the first benzodiazepines were introduced to the market in 1960, there has been an evolution of these drugs toward lower dosage, shorter action, and faster clearance. As a consequence, this new generation of benzodiazepines eluded detection in many laboratories. Benzodiazepines can be abused in several different ways. These drugs are often given in conjunction with alcohol to enhance the desired effect, thus requiring lower doses. This situation has created added challenges to the toxicologist. Use of normal screening and confirmation methods may not detect the lower levels of these drugs, and in some cases the laboratory may not have capability in the methodologies to detect a particular drug.

Another recent challenge for the toxicologist is the detection of γ -hydroxybutyric acid (GHB). The use of this drug is widespread and it is easily obtained or prepared in clandestine laboratories. Similar to the low-dosed benzodiazepines (LDBs) the effect is also potentiated by alcohol. Its detection is difficult owing to the rapid clearance and the low concentrations that appear in urine or serum. Detection methods for GHB are not common, but laboratories are now developing new methods as its popularity is highlighted.

The purpose of *Benzodiazepines and GHB: Detection and Pharmacology* is to provide some background on the pharmacology and metabolism of LDB and GHB and to help the toxicologist develop methodologies that will enable better detection of these drugs in various body fluids, as well as in hair. The first chapter provides background on the LDBs by dealing with the pharmacology and metabolism of these drugs. Chapter 2 deals with immunoassay detection of LDBs, reviewing the current state of testing and providing methodologies that will increase the sensitivity of immunoassay reagents. Chapters 3 and 4 focus on methods for the detection of Rohypnol[®] and other LDBs by mass spectrometry. Chapter 5 addresses the detection of benzodiazepines in hair. Chapter 6 addresses the pharmacology and detection of GHB, and finally

Chapter 7 presents a case study examining the prevalence of drugs used in cases of alleged sexual assault.

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