



B17 Dying to Be Thin: An Overview of Casework and Analysis for Dangerous Weight Loss Drugs

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After attending this presentation, attendees will have an overview of cases encountered by the FDA's Forensic Chemistry Center (FCC) involving either economic fraud or injuries/death associated with various regimens or "drugs" used for weight loss.

The FCC would like to present these examples as an analytical roadmap for those in the general forensic chemistry community who may lack experience analyzing similar cases. The Learning Objective of this presentation is to present the forensic community with an overview of cases encountered by the FDA's Forensic Chemistry Center (FCC) involving either economic fraud or injuries/death associated with various regimens or "drugs" used for weight loss. This poster will highlight the compounds in question, as well as the analytical approaches employed by the FCC in cases involving various "diet drugs."

The FCC receives evidence from all over the U.S. in cases regarding individuals who have been hospitalized, or even died allegedly from using products in an attempt to lose weight. At the opposite end of the spectrum are cases where a specific drug labeled to be present has not been incorporated into the product. The FCC is tasked with determining exactly what compounds (if any), and how much, was present in products consumed by the individual in question.

America's obsession with thinness has fueled a weight-loss industry that grosses close to \$35 billion dollars annually. Today, 55 percent of U.S. adults are overweight, and nearly one in four are obese. These consumers are bombarded with ads touting "lose 30 pounds in 30 days" or the latest dietary supplement promising "to burn fat without exercise."

The weight loss supplements most commonly encountered at the FCC have been those containing ephedrine alkaloids and/or caffeine. With the ban, albeit temporary, of ephedra last year, many companies have looked to other compounds, or at least the "name" of other compounds, to make money. In addition to the ephedra/caffeine submissions, the FCC has received samples containing many other compounds claiming to help the consumer lose pounds, such as 2,4-dinitrophenol, synephrine, usnic acid, tiratricol, and phentermine. The cases presented are ones in which the complainant has suffered ill effects, been hospitalized, or has even died as a result of consuming products containing the aforementioned compounds. The FCC has also received casework where the "touted" chemical is not even present, resulting in higher profits for the manufacturer and no weight loss for the consumer.

These products are marketed to an extremely vulnerable group. In many cases, claims of quick weight loss are made, but the consumer is not aware of the potentially deadly side effects or the fact that the product may not contain the "drug" it is labeled to possess.

The analysis performed at the FCC on these particular cases varies greatly depending on the compound in question. This poster will focus on the various compounds, their physical properties, their potential side effects, and the methods employed to identify and/or quantitate the "active" ingredient. These examples are presented as an analytical roadmap for those in the general forensic chemistry community who may encounter similar cases.

Weight Loss, Death, Economic Fraud