



Apr 21st, 1:15 PM - 2:15 PM

## Extraction of Benzoylecgonine from Urine

Jeffrey T. Woodruff, '02  
*Illinois Wesleyan University*

David Bailey, Faculty Advisor  
*Illinois Wesleyan University*

Follow this and additional works at: <https://digitalcommons.iwu.edu/jwprc>

---

Woodruff, '02, Jeffrey T. and Bailey, Faculty Advisor, David, "Extraction of Benzoylecgonine from Urine" (2002). *John Wesley Powell Student Research Conference*. 1.  
<https://digitalcommons.iwu.edu/jwprc/2002/posters3/1>

This is protected by copyright and/or related rights. It has been brought to you by Digital Commons @ IWU with permission from the rights-holder(s). You are free to use this material in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/ or on the work itself. This material has been accepted for inclusion by faculty at Illinois Wesleyan University. For more information, please contact [digitalcommons@iwu.edu](mailto:digitalcommons@iwu.edu).

©Copyright is owned by the author of this document.

Poster Presentation P52

**EXTRACTION OF BENZOYLECGONINE FROM URINE**

Jeffrey T. Woodruff and David Bailey\*  
Department of Chemistry, Illinois Wesleyan University

A method for extracting Benzoyllecgonine (BE) from urine is being developed which utilizes UV-vis spectroscopy as a means to determine cocaine abuse. BE is the most prevalent metabolite formed from the degradation of cocaine in the body. It has a half-life six times as long as that of cocaine, and can thus be detected in the body for longer periods of time. The most common method of BE detection used currently is Gas Chromatography/Mass Spectrometry. However, due to the derivatization involved, this is a costly method. Other methods have not been used because BE being is a zwitterion. Consequently, it is very hydrophilic and is difficult to extract from urine. A method is being developed in which hydrochloric acid is added to a solution of BE in urine to force BE into its cationic state. It can then be ion-paired with selected anions and extracted from urine using methylene chloride. A UV-vis spectrum is then obtained. This provides the experimenter with a positive or negative reading for cocaine use. If the reading is positive, further testing can be run utilizing GC/MS. However, by utilizing a UV-vis spectrophotometer to obtain a positive or negative reading, the cost of drug testing is greatly reduced.