Detection of Cocaine Use: Extraction of Benzoylecgonine by CO(SCN)₄²⁻

Anton Jerkovich  
*Illinois Wesleyan University*

David Bailey, Faculty Advisor  
*Illinois Wesleyan University*

Follow this and additional works at: [https://digitalcommons.iwu.edu/jwprc](https://digitalcommons.iwu.edu/jwprc)


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.  
©Copyright is owned by the author of this document.
DETECTION OF COCAINE USE: EXTRACTION OF BENZOYLECGONINE BY CO(SCN)$_4^{2-}$

Anton Jerkovich and David Bailey*
Department of Chemistry, Illinois Wesleyan University

Development of a method for the detection of benzoylecgonine (BE), the main metabolite of cocaine, is attempted here. An ion-pairing agent (Co(SCN)$_4^{2-}$) is employed to extract the BE from aqueous solution into dichloromethane. The extract can then be analyzed by HPLC. This method, if successful, promises to have many advantages over current testing methods in that it would be rapid, cheaper, and more efficient. The main obstacle encountered in developing the extraction procedure was repeatability. Studies were performed on the extraction conditions, including stability of the ion pairing solution, purity of the dichloromethane, and potential carryover of BE in the separatory funnels from extraction to extraction. The optimum pH was determined to be 7.0, which differs from previous studies. Linearity of absorbance v. concentration, however, was still not achieved. Continued studies of extraction conditions and, ultimately, an adaptation of an HPLC method remain for future work.