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THE DETERMINATION OF COCAINE METABOLITE IN URINE USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY.

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The primary metabolite of cocaine found in the body after ingestion of the drug is benzoylecognine (BE). A problem arises in the detection of BE because it is highly water soluble and, therefore, difficult to extract from urine into a solvent. This problem makes cocaine one of the most difficult drugs to detect. Previous work has described a number of methods for the removal of BE from the urine followed by some form of analytical detection. The research in this paper focused on the use of an ion-pairing agent to aide in the removal of BE from aqueous solution. The ion-pairing complex used was a 0.05 M solution of hexakis(thiocyanato)iron(III), $Fe(SCN)_6^{3-}$, with a maximum sensitivity achieved at pH=2.7. The urine was treated with the complex solution and immediately extracted with methylene chloride. The methylene chloride was then analyzed by High Performance Liquid Chromatography (HPLC) for the presence of the BE/complex ion pair. A detection limit well within the physiological concentration range was obtained.