

# Detection and Characterization of Cocaine and Related Tropane Alkaloids in Coca Leaf, Cocaine, and Biological Specimens

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**REFERENCE:** Moore JM, Casale JF, Fodor G, Jones AB: Detection and characterization of cocaine and related tropane alkaloids in coca leaf, cocaine, and biological specimens; *Forensic Sci Rev* 7:77–101; 1995.

**ABSTRACT:** Cocaine, atropine and scopolamine are the three most important alkaloids in the tropane group. The detection of these alkaloids and their metabolites, at trace levels in biological matrices, is reviewed. These matrices include human and rat physiological fluids such as blood, urine, and saliva as well as human body tissue and hair. The detection, isolation, and determination of cocaine and related tropane alkaloids in cocaine-bearing leaf of South American and greenhouse-cultivated coca is discussed. The relationship between tropane alkaloids in coca leaf and their presence in illicit refined cocaine is addressed. A survey of modern methods for the detection of tropane alkaloids, including mass spectrometry, ultraviolet, infrared and Raman spectroscopy, gas and high-performance liquid chromatography and immunoassay techniques, is presented.

**KEY WORDS:** Atropine, biological fluid, blood, chromatography, cocaine, coca leaf, drugs, erythroxyllum, immunoassay, scopolamine, spectroscopy, tissue, toxicology, tropane alkaloids, urine.

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