Chapter 1

Plasma Cocaine Metabolite Levels and Liver CYP450 3A4 Isoenzyme Activity as Indicators of Cocaine Metabolism in Rats Treated With Salako Supplements

Natwaine Sherune Gardner  
University of the West Indies, Jamaica

Kedon J. S. Luke  
University of the West Indies, Jamaica

Andrew O. Wheatley  
University of the West Indies, Jamaica

Winston De La Haye  
University of the West Indies, Jamaica

Perceval Steven Bahado-Singh  
University of Maryland Medical System, USA

Lowell L. Dilworth  
University of the West Indies, Jamaica

Donovan A. McGrowder  
University of the West Indies, Jamaica

Everard Barton  
University of the West Indies, Jamaica

Lauriann E. Young-Martin  
University of the West Indies, Jamaica

Ajibeke Salako-Akande  
Getwele Natureceuticals, USA

Henry Lowe  
Environmental Health Foundation, Jamaica

Errol Morrison  
National Commission on Science and Technology, Jamaica

Denise Eldermire-Shearer  
University of the West Indies, Jamaica

Helen Asemota  
University of the West Indies, Jamaica

DOI: 10.4018/978-1-5225-5406-6.ch001
INTRODUCTION

Cocaine (C_{17}H_{21}NO_{4}), classified as a stimulant, is described as being the most potent, powerfully addictive stimulant of natural origin. The leaves of the Coca plant (Erythroxylum coca) can be harvested several times a year. The alkaloid, cocaine, is extracted from the leaves of the Coca plant, which originates in South America, and to a lesser extent, in Africa, Indonesia and India (UNODC, 2010). Cocaine is one of the oldest known psychoactive substances. Coca use has been traced as far back as around 5000 B.C. wherein the leaves of the plant were continually chewed in the mouth. Pure cocaine was isolated in the 1880’s (National Institute on Drug Abuse, 2008). In the early 1900s, pure cocaine was the main active ingredient in numerous pharmaceutical and recreational formulations due to their properties that enhanced general activity and decreased fatigue.

Illicit cocaine from South America is produced normally as relatively pure hydrochloride salt (ranging from 80 – 95 percent) for export to the United States. Illicit cocaine is distributed ranging from a white crystalline powder (cocaine hydrochloride), to that of an off-white chunky material (“crack” or “rock” cocaine) (Drug Enforcement Agency, 2005). Street cocaine is usually adulterated with various substances such as mannitol, lactose and glucose, talc and flour. Due to the heat...