CHAPTER 1

INTRODUCTION

1.1 Methamphetamine in Thailand: need for a methodology for drug characterization techniques to help identify drug trafficking networks.

This study will explore issues of feasibility and suitability, and develop a methodology for, the application of drug characterization methods to aid in the identification of supply sources, trafficking routes and the distribution patterns of illicit methamphetamine pills in Thailand. "Drug Characterization" means developing a detailed scientific description of chemical and physical features of specific drug samples. This research is intended to lay the theoretical and practical groundwork for systematic and science-based drug characterization based on local conditions, in order to bring drug characterization into the inventory of investigative tools used in the operational work of law enforcement authorities in Thailand. Methodologies parallel to what is proposed in this research have already been developed and widely implemented overseas. According to a recent United Nations publication, characterization and impurity profiling of seized drugs is increasingly being used throughout the world to complement other routine investigative techniques used by law enforcement authorities (1). Using drug characterization techniques, chemical links between samples may be established, material from different seizures may be classified into groups of related samples, and the probable origin of samples may be identified. The research being proposed is highly relevant because although drug characterization methodologies have been developed and applied in law enforcement overseas, a Thailand-specific approach has not yet been developed, leaving Thai law enforcement authorities relatively handicapped in their work in relation to law enforcement authorities elsewhere.

1.2 Drug Characterization of Methamphetamine Pills: a scientific tool to help identify drug trafficking networks.

Drug characterization of methamphetamine touches on many aspects of drug production and distribution, as it can take in study of a range of physical and chemical characteristics of samples, typically including impurity profiling and identification,

and cross-referencing of defects or trademarks on the pill surfaces. In view of the increase in the manufacture of, trafficking in and abuse of methamphetamine, as well as the increasing involvement of highly organized criminal groups in illicit methamphetamine trade, there is an urgent need to identify the extent of such activity, the supply sources, the trafficking routes and distribution patterns. Drug characterization can be used as a source of general intelligence to identify local, regional or international drug trafficking patterns and distribution network. In particular, it can help

- To establish specific links between two or more samples of related drugs.
- To classify material from different drug seizures into groups of related samples, thus building up a picture of distribution networks.
- To identify output from new illicit drug manufacturing laboratories.
- To monitor illicit drug manufacturing method and the chemicals used.

As an example of how drug characterization can help with enforcement, a possible outcome could be the control of identified chemical precursors with the aim of reducing illegal drug production (1). It is evident that drug characterization would fit well into the policy framework and law enforcement effort toolbox within Thailand. From physical and chemical profiling of such illicit drugs in the form of tablets comes the potential to link seizures both nationally and internationally in aid of the efforts to combat illicit drug trafficking worldwide. Research into the pharmaceutical industry, specifically into the tests used for quality assurance procedures, highlighted various techniques that could be applied in the profiling of illicit drugs in tablet form. With these techniques the physical and chemical profiles of methamphetamine tablets can be determined to help identify the techniques of methamphetamine tablet manufacture in clandestine laboratories.

1.3 Objective of the study

This study will explore issues of feasibility and suitability, and develop a model methodology for the application of drug characterization methods to aid in the identification of trafficking routes and the distribution patterns of illicit methamphetamine pills in Thailand. This research is intended to lay the theoretical and practical groundwork for systematic and science-based drug characterization based on local conditions, to have a place in the inventory of investigative tools used

in the operational work of law enforcement authorities in Thailand. This study also investigated through in vitro testing the dissolution and disintegration properties of methamphetamine pills. The purpose of this aspect of the study was to assess the potential of such tests to provide strategic and tactical information to help understand the formulation processes used in the clandestine methamphetamine laboratories spread through Thailand. A method for determining food dyes in methamphetamine pills was developed. Additionally, the food dyes added to subject methamphetamine pills seized in Thailand were identified.

1.4 Scope of the study

This study through determining key physical properties such as colour, logos, diameter, thickness, weight, hardness and chemical properties of seized methamphetamine pills, and then subjecting this physico/chemical data to innovative and highly effective analytical tools, yields a detailed and accurate picture of the distribution patterns of methamphetamine pills in the northern Thai regions. Further study of dissolution and disintegration characteristic of methamphetamine pills with three popular logos (wY, wy, WY) was carried out and yielded additional data for analysis. Additional data also was developed in a study of dyes present in a subset of the seized pills (three popular orange shades) using high-performance liquid chromatography.