J Forensic Res 2015, 6:5
http://dx.doi.org/10.4172/2157-7145.C1.018

OMICS International
conferenceseries.com

4th International Conference on
Forensic Research & Technology
September 28-30, 2015 Atlanta, USA

Forensic examinations to determine illicit drugs commonly seized in the Philippines: From evidence to judgment

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Illicit drug industry is certainly a global concern and demonstrates a tremendous challenge to various drug law enforcement agencies. In recent decades, crime rates associated with drug abuse has been increasing and its adverse social impacts are very alarming. These many kinds of drug of abuse are derived from either natural products or chemical synthesis. The former include mainly opiates, cannabis and cocaine. The latter include various amphetamine type stimulants (ATS) such as methamphetamine and methylenedioxymethamphetamine (MDMA). In Philippines, methamphetamine hydrochloride or shabu is the most common drug of abuse and accounts the majority of all locally reported drug law violations. Marijuana(Cannabis sativa) remains the second most used drug in the country as alternative drug choice to methamphetamine hydrochloride. Furthermore, a number of local seizures also comprise MDMA, cocaine and selected opiates and benzodiazepines. To mitigate illegal drug concerns in the Philippines, the government through the Philippine Drug Enforcement Agency(PDEA) strictly enforces a comprehensive dangerous drugs law in partnership with various drug enforcement groups in the country. Accordingly, all seized items are subjected to forensic analysis for drug identification to support arresting officers in their effort to apprehend drug offenders. Given that PDEA being the lead agency for anti-drug operations, PDEA laboratory service is well-equipped to extensively analyze different drug evidence seized by law enforcers. Note worthily, since the Philippines is archipelagic in nature, PDEA forensic laboratories were decentralized strategically nationwide for fast tracking of results. This review summarizes various methods of drug analysis in the country using both traditional and modern methods and also employing the use of analytical instruments such as FT-IR, RS, GC-FID and GC-MS. It further highlights the Filipino forensic chemists vital role in providing valuable drug identification reports required to execute suitable charges for drug criminals. Finally, some problems regarding forensic examination in the Philippines are discussed for reference purposes.

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Recover latent fingerprints on nonporous surfaces using a modified vacuum-Cyanoacrylate Ester (CE) technique

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Our premise is that the temperature of the substrate material during the fuming event, combined with the relative humidity is crucial in obtaining the best possible fingerprint development and that the specific heat capacity and thermal conductivity of the evidence substrate material enhance the polymerization process involved with heat accelerated vacuum cyanoacrylate fuming. On identical materials with deposited latent fingerprints developed with standard cyanoacrylate fuming and heat accelerated vacuum fuming with cold, we have been able to show that there is a substantial increase in polymerization which is easily observed visually and supported by measurable weight increases when the evidence is cooled using specific heat capacity. We have shown that we can increase the polymerization on the fingerprint ridge site by cooling the temperature of the substrate. When extreme cold is exposed to humidity there is a layer of frost that is deposited on the substrate. In a vacuum environment there is a time where the background humidity evaporates and the latent print retains a portion of that humidity. Once the atmosphere is removed a heating element heats the liquid cyanoacrylate ester (CE) fuming the latent. The temperature difference between the cold item and the heated fume results in an increased condensation of the CE fume. In a vacuum environment the fume adheres only to the latent print and not the background. This has the capability of recovering dried sebaceous latent fingerprints.

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