



Extraction of Compounds from Latent Fingerprints

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Introduction

Fluorescent silica nanoparticles (FSNs) can be used to detect and lift latent fingerprints. The FSNs used in this project were hydrophobically modified to increase their ability to bind to the proteins and found in fingerprints. The particles were applied to model prints, and subsequently lifted onto chromatography paper. The lifted prints underwent an extraction process; and the extracts were analyzed using GC-MS.

Results & Discussion

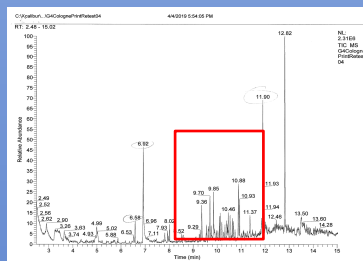


Figure 1: Analysis of "cologne print" from Subject A

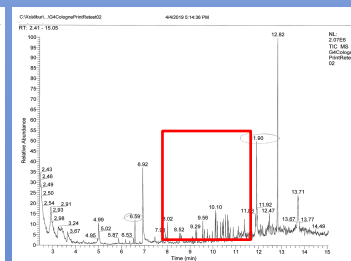
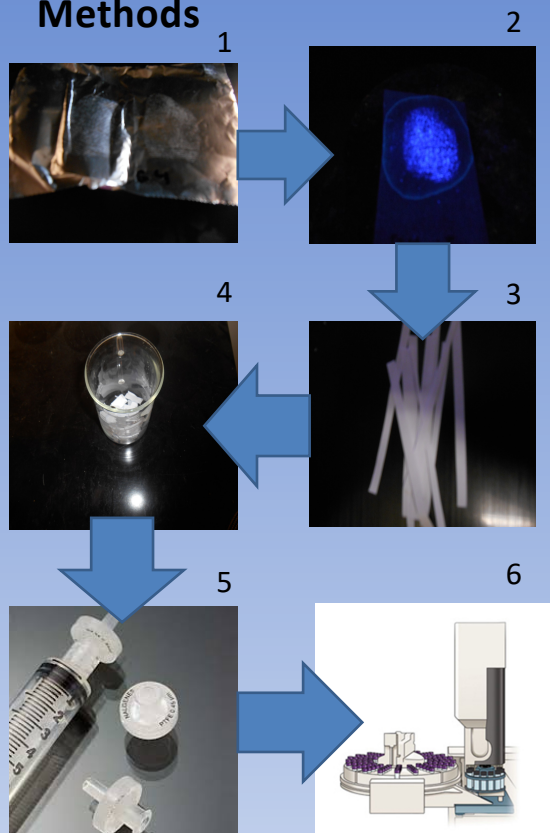


Figure 2: Analysis of "regular print" from Subject B

Methods



- 1) Dusted prints on Al foil using hydrophobically modified FSN
- 2) Lifted developed prints onto chromatography paper treated with 10% SDBS
- 3) Chromatography paper cut into strips, then diced.
- 4) Acetone solvent used to extract molecules
- 5) Extracted solution filtered through C-18 syringe plug
- 6) Analyzed filtered solution with GC-MS

