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Poster Presentation 12

SYNTHESIS OF NEW POSSIBLE
FINGERPRINT DETECTION AGENTS

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Even in the age of forensic evidence such as DNA fingerprinting, the latent fingerprint remains the most highly regarded type of physical evidence. Therefore, the ability of criminal investigators to develop these fingerprints and identify the suspect is extremely important. Latent fingerprints consist of palmar sweat and other body chemicals that yield amino acids. In most cases, a developing agent is reacted with the amino acids to produce a new compound which, is often visible under a specific wavelength of light. This allows the print to be visualized, and the suspect to be identified.

The most popular compound used as a developing agent is ninhydrin (1). However, ninhydrin has flaws. For example, ninhydrin has a very low sensitivity, which means that some people will not excrete enough perspiration to leave an identifiable print. For this reason, a search for new developing agents is important.

Since ninhydrin has so many useful properties, one method of synthesizing a new developing agent is through ninhydrin analogues. This method allows the combination of ninhydrin with other compounds which may eliminate some of ninhydrin's faults. Our research involved the synthesis of two ninhydrin analogues: 6-oxo-2,4-dithio-1,2,3,4-tetrahydro-6H-indeno[2,1-g]pteridine (2). and 1,3-dimethyl-2,4,5-trioxo-1,2,3,4-tetrahydro-6H-indeno[2,1-g]pteridine (3). Both compounds have been successfully synthesized.

