B51 Biotransformation of Benzaldehyde to l-Ephedrine

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The goal of this presentation is to update the attendee's knowledge in clandestine laboratories and the most recent trends of manufacturing in the U.S.

This presentation will impact the forensic community and/or humanity by educating the drug analysis portion of the forensic community in recent trends for manufacturing methamphetamine.

Due to recent legislation regulating pseudoephedrine sales, the supply of precursor chemicals for the manufacturing of methamphetamine has been limited. Traditionally, extraction from the plant species *Ephedra* and a synthetic chemical process of production was utilized. Many methods have been employed for the production of l-ephedrine. In recent years, an underground network of information has included a biotransformation process involving benzaldehyde by yeast and molasses. This process utilizes traditional fermentation principles with the use of yeast and a type of substrate, in this case, molasses. The Drug Enforcement Administration's South Central Laboratory received an assistance call involving the aforementioned process. Up to this point, the biotransformation method had not been encountered in any literature relating to methamphetamine manufacturing. It was determined that the biotransformation of benzaldehyde to l- phenylacetylcarbinol (l-PAC), which can then be hydrogenated into l- ephedrine with methylamine and platinum shavings, is a viable process.

Methamphetamine, Ephedrine, Biotransformation

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