

Applications of the Fluorescamine Reaction with Penicillins and Their Derivatives

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Spectrophotometric and fluorometric methods have been used for the detection of 6-aminopenicillanic acid (6-APA) using a fluorescamine reaction. Levels of 6-APA as low as 100 $\mu\text{g}/\text{mL}$ could be accurately quantified using the spectrophotometric technique. This represents a substantial improvement on other available colorimetric detection methods.

The fluorometric technique was shown to be more sensitive than the spectrophotometric technique, with detection limits as low as 30 ng/mL obtained. This technique was also used in the

detection of penicillin acylase activity against *c*-aminobenzylpenicillins, 7-aminocephalosporanic acid, and benzylpenicilloic acid; however, for this latter acid, the method was successful only if a purified form of the enzyme was used at pH 7.8.

Since penicillin acylase has been detected in some medicinal mushrooms, this further development of an accurate and sensitive activity assay will allow further investigation into the bioactivity of some Higher Basidiomycetes edible and medicinal mushroom species containing this enzyme.