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Paper Title: Automated Bacterial Colony Counting on Agar Plate

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Abstract

In several fields, such as microbiology research, medical diagnostics, and food safety evaluation, bacterial colony counting is extremely important. However, the method of manual counting is time-consuming, labor-intensive, and prone to human error. This research approached these problems by using MATLAB's image processing feature to automatically count the number of bacterial colonies on agar plates. This technique effectively detects bacterial colonies from photos of agar plates by using image analysis algorithms. The images of agar plates were captured while controlling the lighting and adjusting the size to achieve the highest possible image quality. This study encompassed 10 bacterial species, achieving an accuracy of approximately 80%. This level of precision underscores the reliability and effectiveness of our automated system