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Optical Methods of Antibiotic Residues Detections: A Comprehensive Review

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Highlights

- Review of the optical methods to detect antibiotic residues for the first time.
- The sensing structures, class of antibiotics are summarized and contrasted.
- The limit of detections are summarized and contrasted.
- The optical fiber-based method is also reviewed as a novel method.
- The future direction of sensing performances and application fields is discussed.

Abstract

This review paper presents the achievements and developments in the optical methods of antibiotic residues detection. The specific optical methods such as optical immunoassay methods, molecular spectroscopy detection methods, and optical fiber based detection methods are summarized in detail. And each of them was summarized and contrasted in a separate table, where the sensing structure, class of antibiotics and the limit of detection are all listed. Optical methods of antibiotic detections are widely used during the last two decades due to their short detection cycles, high sensitivity and simple operation, which are mainly researched for the food and water quality inspections. The future direction of sensing performances and application fields is also discussed.

Keywords: Optical methods; Antibiotic detections; Optical immunoassays; Molecular spectroscopy; Optical fiber sensors; Safety detections

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