

Evaluation of Urease Activity Assessed on Urea Concentration Using Tannic Acid-Silver Nitrate Colorimetric Method

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Editor's note: Urease, a nickel-dependent enzyme, hydrolyzes urea into ammonia and carbon dioxide. Imohiosen et al. explored how urea concentration affects urease activity using a colorimetric method with tannic acid and silver nitrate. Low concentrations (≤ 1.00 mM) limited enzyme activity, while an optimal concentration of 3.00 mM produced the highest absorbance (0.949), indicating maximum activity. Concentrations above 4.00 mM decreased absorbance, likely due to pH shifts. Low urea levels showed sharp SPR peaks at 414 nm, whereas higher levels produced broader peaks, suggesting substrate inhibition. These findings support the development of a sensitive urea biosensor.

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