

聚吡咯尿酸酶电极的生物电化学活性

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摘要 聚吡咯尿酸酶电极具有快速的生物电化学响应. 在 5.9×10^{-6} mol·dm⁻³ 至 1.5×10^{-3} mol·dm⁻³ 的尿酸浓度范围内, 酶电极的响应电流与底物浓度之间呈线性关系. 固定酶的催化反应活化能为 $34.81 \text{ kJ} \cdot \text{mol}^{-1}$. 与可溶性的尿酸酶相比, 聚吡咯尿酸酶电极的一些生物活性, 如与溶液的 pH 和温度的关系, 发生了有利的变化.

关键词 [生物活性](#) [尿酸酶](#) [生物电化学](#) [酶电极](#) [聚吡咯](#)

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Bioelectrochemical activities of the polypyrrole uricase electrode

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Abstract The polypyrrole uricase electrode has a fast bioelectrochem. response. In the region from 5.9×10^{-6} to 1.5×10^{-3} mol·dm⁻³ of uric acid, the response current of the polypyrrole uricase electrode is proportional to the substrate concentration. The apparent activation energy of the catalyzed reaction of the immobilized enzyme is $34.81 \text{ kJ} \cdot \text{mol}^{-1}$. As compared with the soluble uricase, advantageous changes were obtained for the immobilized enzyme in the pH and temperature dependences of the activity. The repeatability of the uricase electrode for the determination of the uric acid concentration is affected by the kind of conducting polymer, which is used for a support material of the immobilized enzyme.

Key words [BIOLOGICAL ACTIVITY](#) [URATE OXIDASE](#) [BIOELECTROCHEMISTRY](#) [ENZYME ELECTRODES](#) [POLYPYRROLE](#)

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