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# Simultaneously electrochemical detection of uric acid and ascorbic acid using glassy carbon electrode modified with chrysanthemum-like titanium nitride

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## Abstract

Chrysanthemum-like titanium nitride (CL-TiN) was fabricated at 800 °C through ammonia nitridation treatment of TiO<sub>2</sub> precursor. An electrochemical biosensor based on the glassy carbon electrode modified with TiN (CL-TiN/GCE) was prepared for the simultaneously detection of ascorbic acid (AA) and uric acid (UA). Excellent results are obtained for the separate quantification of UA and AA by differential pulse voltammetry due to the special structure and large surface area of TiN. The detection limits of the electrochemical sensor are 1.52 μM and 0.28 μM for AA and UA (S/N = 3), and the working linear ranges for AA and UA are 50-1500 μM and 10-300 μM, respectively. This sensor also exhibits outstanding anti-interference ability towards co-existing molecules with good stability, sensitivity and reproducibility. The present work opens a new window for simultaneous detection of AA and UA based on the CL-TiN/GCE.

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