An Amperometric Xanthine Oxidase Enzyme Electrode Based on Hydrogen Peroxide Electroreduction

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A xanthine oxidase enzyme electrode (*xanthine oxidase immobilized on electrochemically modified graphite and conveniently coated with gelatine electrode working surface*) for quantitative analysis of xanthine is proposed. The detection of thus developed electrochemical system is based on the electroreduction of hydrogen peroxide generated in enzyme layer and offered L-ascorbic and uric acid reducing interference effect on the substrate determination. At a working potential −50 mV (vs. Ag/AgCl) the detection limit of 4.5 μM and the linearity of the amperometric signal up to substrate concentration of about 40 μM were found. At that working potential, the electrode is practically inert towards L-ascorbic- and uric acid present. The response time did not exceed 2 min.