Chitosan based nano-membrane for Chromium(III) Determination in Pharmaceutical and Foodstuff Samples

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A newly fabricated chromium selective liquid electrode sensor was successfully designed according to the reaction between nano-chitosan and chromium(III) ions. The characteristics specific slope (58.5 mV/decade), linearity range of concentration from 1.0×10^{-6} - 1.0×10^{-1} M, the limit of detection (1.32×10^{-8})M, selectivity behavior among some inorganic cations, the dynamic response time(10s), lifespan (four months),the potential dependence on pH and basic interesting validations and parameters were investigated. The nominated electrode was successfully utilized to detect chromium(III) ions in pharmaceutical and foodstuff samples. The data provided by the developed sensor were treated, statistically and compared with other electrodes listed in the literature.

Keywords: Membrane sensor, Nano-chitosan, Chromium ions, Pharmaceutical and Foodstuff samples

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