

## Development of Uracil and 5-Fluorouracil Sensors Based on Molecularly Imprinted Polymer-Modified Hanging Mercury Drop Electrode

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Molecularly imprinted polymers (MIPs), imprinted for uracil and 5-fluorouracil, were used in the development of electrochemical sensors for selective and sensitive analysis of uracil and 5-fluorouracil in aqueous and blood plasma samples. The same MIP motif prepared from melamine and chloranil precursors was used for both analytes as a coating material for modification of a hanging mercury drop electrode (HMDE) by a drop-coating method using dimethylformamide casting solution. This revealed the imprinting versatility of the imprinted polymer, where binding events for both analytes in aqueous environments were transduced into their respective differential pulse, cathodic stripping voltammetric signals with high sensitivity and without any false positive results owing to nonspecific sorptions, interferences and cross-reactivities. The limits of detection ( $3\sigma$ ) for uracil and 5-fluorouracil were found to be as low as 0.34 and 0.26 ng mL<sup>-1</sup>, respectively, which enable substantial sensitivity in the diagnosis of uracil-disorders and fluoropyrimidine toxicity in patients.

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