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Uguressa (*Flacourtia ramontchii*) tissue modified amperometric biosensor for determination of catechin

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Polyphenol oxidases from Uguressa tissues have a high catalytic activity for the aerobic oxidation of catechin to respective *ortho*-quinone. An amperometric biosensor can therefore be constructed by incorporating fruit tissue of Uguressa in a carbon paste matrix. The enzymatically-generated *ortho*-quinone was amperometrically reduced at – 0.2 V vs. saturated calomel reference electrode (SCE) and hence the reduction current is directly proportional to the concentration of catechin present in the solution.

Further more, analytical characteristics of the sensor, such as linear dynamic range, sensitivity, response time, lifetime were evaluated along with some enzyme kinetics.

The proposed biosensor provides a sensitive response (2.40×10^6 nA dm^3 mol^{-1}) for catechin in the wide dynamic range ($3.80 \times 10^{-5} - 3.59 \times 10^{-4}$ mol dm^{-3}), with a very fast response time (less than 2 s) and a useful lifetime of at least 1 month. Apparent Michaelis-Menten constant, K_m' was also estimated (2.23×10^{-4} mol dm^{-3}) by using Lineweaver-Burk plot.