Development of a New Immunosensor for the Detection of Dopamine

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Graphite immunoelectrodes as immunosensors using indirect immobilization of a hapten were investigated for their applicability to detect dopamine hydrochloride at low levels. Conditions were optimized to achieve the highest sensitivity using the indirect immobilization of dopamine hydrochloride through a polymerized glutaraldehyde network on microtiter plates using ELISA technique. The conditions were later transferred to the graphite rods (ø 0.8 m × 20 mm) and a comparison between the two different sensitivities (IC_{50} midpoint of test) was carried out. Graphite electrodes showed higher sensitivity towards dopamine than ELISA, since they were able to detect dopamine with a midpoint of test of 0.2 mmol/l while using ELISA they were able to detect dopamine hydrochloride at 2 mmol/l.

Key words: Indirect Format ELISA, Graphite, Dopamine