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New approach to selective detection of 2,4-dichlorophenoxyacetic acid with a cholinesterase amperometric biosensor

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Abstract

A new method of detection of 2,4-dichlorophenoxyacetic acid by means of immobilized monoclonal antibodies and an amperometric cholinesterase biosensor is proposed. A combination of monoclonal antibodies to 2,4-dichlorophenoxyacetic acid with an enzyme electrode provides high selectivity of measurements and allows trace amounts of this pesticide to be detected within a concentration range of 1 × 10-1 to 5 × 10-7 M with a sensitivity threshold of 5 × 10-12 M.