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A new type of amperometric biosensor based on carbon nanotubes

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Abstract A carbon nanotube (CNT) modified electrode for monitoring the NADH was studied. A substantial decrease in the overvoltage required for NADH oxidation (compared to ordinary carbon electrodes) is observed using single-wall and multi-wall carbon-nanotube coatings (from 600 to 300 mV and 470 mV respectively). The CNT-coated electrodes allow highly sensitive, low-potential and stable amperometric sensing. Such ability of carbon nanotubes to promote the NADH electron-transfer reaction suggests great promise for dehydrogenase-based amperometric biosensors.

Keywords: Biosensor, Carbon nanotubes, Nicotinamide adenine dinucleotide (NADH).

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