Development of Laccase-TiO₂@Carbon Paste Biosensor for Voltammetric Determination of Paracetamol

Douglas Vieira Thomaz, Mayk Teles de Oliveira^{}, Germán Sanz Lobón, Carlos Eduardo Peixoto da Cunha, Fabio Bahls Machado, Emily Kussmaul Gonçalves Moreno, Karla Carneiro de Siqueira Leite, Nara Ballaminut, Morgana Fernandes Alecrim, Murilo Ferreira de Carvalho, Bruna Guimarães Isecke, Isaac Yves Lopes de Macêdo, Renê Oliveira do Couto, Edson Silvio Batista Rodrigues, Luiz Alcir de Faria Carvalho, Leo Fernandes Ávila*

Faculdade de Farmácia, Universidade Federal de Goiás, Rua 240, S/n - Setor Leste Universitário, Goiânia - GO, 74605-170, Brazil.

^{*}E-mail: mayk.teles@hotmail.com

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In this work a nanostructured TiO₂/carbon graphite matrix was employed in the development of a laccase (Lcc) carbon paste biosensor. The biosensor, hereby named Lcc-TiO₂@CPE had its response evaluated for paracetamol. Results evidenced that the biosensor was remarkably selective and sensible concerning paracetamol pharmaceutical form assessment. Linear response was obtained by differential pulse voltammetry (DPV) from 8 to 120 µM, with a limit of detection (LoD) of 1 µM, which was nine-fold superior than the one observed for unmodified carbon paste biosensor. Therefore, Lcc-TiO₂@CPE may be a novel low cost tool in analgesic drugs assessment.

Keywords: nanostructured electrodes; laccase; anti-inflammatory drugs; paracetamol; aspirin; pharmaceutical.

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