

[Go to old article view](#)[Get access](#)**Electroanalysis** [Explore this journal >](#)[Browse Early View Articles](#)[Online Version of Record published before inclusion in an issue](#)**Full Paper**

## Electroanalytical Study of Macluraxanthone: a Natural Product with a Strong Antioxidant and Antimalarial Activity

Jorge Ginja Teixeira, Alfredina Veiga, Cristina Barrocas Dias, Dora Martins Teixeira

**First published:**6 June 2017 [Full publication history](#)**DOI:**10.1002/elan.201700181 [View/save citation](#)**Cited by (CrossRef):**0 articles [Check for updates](#) [Citation tools](#)[Funding Information](#)

### Abstract

The electrochemical behaviour of macluraxanthone (McX), a natural compound with significant antioxidant and anti-malarial properties, is reported here for the first time. The anodic behaviour of McX is related with its chemical reducing power, and both redox properties are compared with the ones of osajaxanthone (OjX), a similar molecule with non-antioxidant activity. Based on cyclic voltammetric technique, it was observed that the electrooxidation of McX at a glassy carbon electrode (GCE) is quasireversible and pH dependent, occurring easily at  $\text{pH} \geq 7$ . The anodic behaviour of McX correlates well with its antioxidant/reducing activity (evaluated by the DPPH method), being both redox processes attributed to the oxidation of the catechol moiety of McX. The electron transfer processes between the catechol/o-quinone redox function of McX and the GCE are simultaneously diffusion- and adsorption-controlled and blocked by the adsorption of some inactive products. The achieved results are very useful for understanding and predicting the oxidative behaviour of other xanthenes with biological properties. The main anodic process of McX at GCE yields a well-defined and sensitive DPV response, which can be easily used for the analytical determination of this natural xanthone in real samples, namely in physiological infusions to be used in biological and clinical trials.

[Get access to the full text of this article](#)

### Article Information

## Supporting Information

### Related content

#### Articles related to the one you are viewing

There are currently no results to show, please try again later

---

# WILEY

**Browse Publications**

**Browse by Subject**

**Resources**

Help & Support

Cookies & Privacy

Terms & Conditions

About Us

Wiley Job Network

Advertisers & Agents

---

Powered by Wiley Online Library Copyright © 1999 - 2017 John Wiley & Sons, Inc. All Rights Reserved