
www.elsevier.com/locate/talanta

# Molecularly imprinted polymer for determination of lumefantrine in human plasma through chemometric-assisted solid-phase extraction and liquid cromatography

Pedro Henrique Reis da Silva, Melina Luiza Vieira Diniz, Gerson Antônio Pianetti, Isabela da Costa César, Maria Elisa Scarpelli Ribeiro e Silva, Roberto Fernando de Souza Freitas, Ricardo Geraldo de Sousa, Christian Fernandes

PII: S0039-9140(18)30207-8
DOI: https://doi.org/10.1016/j.talanta.2018.02.090
Reference: TAL18409

To appear in: *Talanta*

Received date: 18 January 2018
Revised date: 23 February 2018
Accepted date: 24 February 2018

Cite this article as: Pedro Henrique Reis da Silva, Melina Luiza Vieira Diniz, Gerson Antônio Pianetti, Isabela da Costa César, Maria Elisa Scarpelli Ribeiro e Silva, Roberto Fernando de Souza Freitas, Ricardo Geraldo de Sousa and Christian Fernandes, Molecularly imprinted polymer for determination of lumefantrine in human plasma through chemometric-assisted solid-phase extraction and liquid cromatography, *Talanta,* https://doi.org/10.1016/j.talanta.2018.02.090

# Molecularly imprinted polymer for determination of lumefantrine in human plasma through chemometric-assisted solid-phase extraction and liquid cromatography

Pedro Henrique Reis da Silva[a], Melina Luiza Vieira Diniz[a], Gerson Antônio Pianetti[a], Isabela da Costa César[a], Maria Elisa Scarpelli Ribeiro e Silva[b], Roberto Fernando de Souza Freitas[b], Ricardo Geraldo de Sousa[b], Christian Fernandes[a*]

[a] Laboratório de Controle de Qualidade de Medicamentos e Cosméticos, Departamento de Produtos Farmacêuticos, Faculdade de Farmácia, Universidade Federal de Minas Gerais

[b] Laboratório de Ciência e Tecnologia de Polímeros, Departamento de Engenharia Química, Escola de Engenharia, Universidade Federal de Minas Gerais Avenida Antônio Carlos, 6627, Pampulha, Belo Horizonte – MG, Brazil, 31270-901

* Corresponding author, Tel: +55 31 34096957; fax: +55 31 34096976.

cfernandes@farmacia.ufmg.br



## ABSTRACT

Lumefantrine is the first-choice treatment of Falciparum uncomplicated malaria. Recent findings of resistance to lumefantrine has brought attention for the importance of therapeutic monitoring, since exposure to subtherapeutic doses of antimalarials after administration is a major cause of selection of resistant parasites. Therefore, this study focused on the development of innovative, selective, less expensive and stable molecularly imprinted polymers (MIPs) for solid-phase extraction (SPE) of lumefantrine from human plasma to be used in drug monitoring. Polymers were synthesized by precipitation polymerization and chemometric tools (Box-Behnken design and surface response