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**Effect of coffee diterpenes against *Leishmania amazonensis*****Claudia Moraes de Rezende, Carlos Luan A Passos, Christian Ferreira, Fábio Junior M Novaes and Elvira M Saraiva**  
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**L**eishmaniasis is a public health problem in 98 countries and its therapy is based on Pentavalent antimonials, Pentamidine, Amphotericin B and Miltefosine. For all of them high toxicity, elevated cost and parasite resistance have been reported. Natural products are potential sources of novel active molecules that may provide structural template for drug discovery. Studies showed that coffee intake may be effective against heart and coronary disease, Parkinson's and Alzheimer's. Cafestol and Kahweol (C&K) are two natural coffee diterpenes with antitumoral, anti-inflammatory and antioxidant activities. The aim of this study was to evaluate the effect of C&K together and separately against *Leishmania amazonensis*. Cytotoxicity of C&K (1:1) for host cells was investigated by the XTT method. Our results demonstrated a  $CC_{50}$  of 26.9  $\mu\text{g/ml}$ . Besides, C&K presented an anti-*L. amazonensis* activity with an  $IC_{50}$  of 4.7  $\mu\text{g/ml}$  for promastigote forms, while for intracellular amastigotes the  $IC_{50}$  was 12.3  $\mu\text{g/ml}$ . The C&K selectivity index was 2.19. Our results showed that C&K does not induce Nitric Oxide (NO) production on macrophages infected with *L. amazonensis*, moreover, reduced 2.1-fold the NO production on IFN- $\gamma$  and LPS-activated macrophages. To rule out a possible NO scavenger effect of C&K, a cell-free system was used with SNAP as a NO donor in the presence or not of C&K and these drugs was not able to reduce NO levels. However, they increase 2.1-fold the production of reactive oxygen species in infected macrophages. Our data point C&K as promising substances for the development of a drug with leishmanicidal activity.

**Recent Publications**

1. Duran A A, Tsukui A, Kayode F S T, Martinez S, Bizzo H R, Rezende C M (2017) Coffee: General Aspects and its Use beyond Drink. *Revista Virtual de Química*; 9(1): 107-134.
2. Passos A, Rodriguez R, Ferreira C, Hamerski L, Pinto A C, Rezende C M, Saraiva E M (2017) Anti-*Leishmania amazonensis* activity of *Serjania lethalis* A. St.-Hil. *Parasitology International*; 66(1): 940-947.

**References**

1. Alvar J, Vélez I D, Bern C, Herrero M, Desjeux P, Cano J, Jannin J, Boer M D (2012) Leishmaniasis worldwide and global estimates of its incidence. *PLoS One*; 7: e35671.
2. Kitzberger C S G, Scholz M B S, Pereira L F P, Vieira L G E, Sera T and Silva J B G D, et al. (2013) Diterpenes in green and roasted coffee of *Coffea Arabica* cultivars growing in the samaedapho-climatic conditions. *Journal of Food Composition and Analysis*; 30: 52-57.

**Biography**

Claudia Moraes de Rezende is a Professor and Researcher at the Chemistry Institute of UFRJ and is also the Vice President in the Brazilian Society of Mass Spectrometry. Her research interests are in dealing with natural products chemistry and spectroscopy.

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