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B191 Tyrosinase inhibitors from Brazilian medicinal plantsM.G.L. Brandão^a, C.N. Reis^a, V.A. Bertolini^a, J.R. Stehmann^a and I. Kubo^b^a Universidade Federal de Minas Gerais, Faculdade de Farmácia, Av. Olegário Maciel, 2360. 30180-112 Belo Horizonte, Brazil.^b University of California at Berkeley. Environmental Science, Policy and Management, 201 Wellman Hall 3112, Berkeley, CA 94720-3112, USA.

Tyrosinase (EC 1.14.18.1), also known as polyphenol oxidase (PPO), is a copper-containing enzyme found in microorganisms, animals and plants. Tyrosinase inhibitors have become increasingly important in cosmetic and medicinal products in relation to hyperpigmentation. The development of tyrosinase inhibitors is necessary (1,2) and the Brazilian plants are a rich source of bioactive compounds. Species from Asteraceae (*Vanillosmopsis*, *Lychnophora*, *Baccharis* and *Solidago*), Anacardiaceae (*Anacardium*), Gentianaceae (*Lisianthus*, *Dejanira*) and Rhamnaceae (*Ampelozizyphus* and *Zizyphus*) were collected and identified. Different extracts (*n*-hexane, ethyl acetate, ethanol and *n*-butanol) were prepared with each plant. After drying, the extracts were assayed to tyrosinase inhibition. The mushroom tyrosinase used for the bioassay was purchased from Sigma Chemical Co. (St. Louis, MO). Although mushroom tyrosinase differs somewhat from other sources, it was used for experiment because it is readily available. All the samples were dissolved in DMSO and used for the experiment at 30 times dilution. The enzyme activity was monitored by dopachrome formation at 475 nm up to the appropriate time (not longer than 10 min). The active extracts were fractionated in silicagel and C-18RP chromatographic column in order to isolate the active compounds. The ethanol and ethyl acetate extracts from *Baccharis trimera* showed a significant inhibitory activity. Fractionation guided study from these extracts led to a flavonoid rich fraction (aglycon and glycosides), with showed a ID_{50} of 700 $\mu\text{g/mL}$. Extracts from the other plants showed lower activity in comparison with *B. trimera*.

Acknowledgements: FAPEMIG (Belo Horizonte/ Brazil).

References: 1. Kubo I et al. (2000) Bioorg. Med. Chem. 8(7): 1749-55. 2. Kubo I and Kinst-Hori I (1999) J. Agric. Food Chem. 47(10): 4121-5.

B192 Plants used to treat fevers and malaria in BrazilF.Q. Oliveira^a, M.G.L. Brandão^a, R.G. Junqueira^a, J.R. Stehmann^a and A.U. Krettli^b^a Universidade Federal de Minas Gerais, Faculdade de Farmácia, Av. Olegário Maciel, 2360. 30180-112 Belo Horizonte, Brazil.^b Centro de Pesquisas René-Rachou/ FIOCRUZ. 30115 Belo Horizonte, Brazil.

Several plants are used in traditional medicine of Latin America to treat fevers and malaria (1,2). In order to know the plants more used in Brazil, we have performed an extensive revision of plants indicated to treat fevers and malaria in the Brazilian ethnobotanical bibliography. A total of 108 bibliographical sources (technical and popular books, articles from national periodic and annals of congress) have been consulted. Each bibliographic reference received a weight (10, 2 or 0.4), according to the published information. A book which describes an ethnobotanical survey on an endemic area of malaria in Amazon, for example, received weight 10. Another which consisted on a simple revision of plants used in Brazil received weight 0.4. In each reference we have noted data as family, scientific and popular names, part used and indications of the plants. A total of 197 different species are indicated as useful for the treatment of fevers and malaria. The calculation of their citation frequency versus weight of each reference led to the different values of scores for each one. The species *Senna occidentalis* (L.) Roxb. and *Momordica charantia* L. received the highest scores (139.6 and 125.6, respectively), followed by *Carapa guianensis* Aubl. (64.4), *Geissospermum sericeum* Benth & Hook ex Miers. (64.0), *Aspidospermum nitidum* Benth ex Muell. (62.4), *Myrtus brasiliensis* L. (59.6), *Piper umbellata* (*Pothomorphe umbellata*) L. (57.6), *Croton cajucara* Benth (50.0), *Solanum paniculatum* L. (47.6), *Coutarea hexandra* (Jacq.) K. Schum. (46.4) and *Casearia sylvestris* SW (40.4). The results demonstrate that several plants are used to treat fever and malaria in Brazil and that more used should be explored.

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References: 1. Milliken, W. (1997) Plants for Malaria, Plants for fever. Medicinal species in Latin America – a bibliographic survey. The Royal Botanic Gardens, London. 2. Brandão MGL et al. (1992) J Ethnopharmacol. 36: 175-182.