ERBALATINA PHYTOACTIVES

Technical Report

PEDRA HUME CAA

Scientific name: *Myrcia multiflora* D.C. [7]

Family: Myrtaceae [7]

Popular names: Pedra-Hume-Caá [8], Pedra-Ume-Caa [1,2], Insulina vegetal [8], Cambuhy [3]

Used parts: Leaves

Botanical characteristics: Pedra hume caá is a medium-sized shrub that grows in drier regions of the Amazon and other parts of Brazil. It has small, green leaves and large, orange-red flowers. [10]

Habitat: Brazil.

Chemical composition: tannins [2], desmanthin-1 [9], myciacitrins I and II and myrciaphenones A and B, three new flavone glucosides, myrciacitrins III, IV and V [5], myricitrin, mearnsitrin, quercitrin, guaijaverin [4], linalol, pinenes, germacrene D, β-cariophyllene, α-bisabolol, selinenes. [11]

Uses: diabetes [8], diarrhea [2]

Indications: antidysenteric, hypoglycemic, diabetes, enteritis and hemorrhage, mouth ulcer, antagonist of bracitacin [8], diuretic, hypotensor, inotropic and chronotropic effects [1], diarrhea [2]

Pharmacology:

- ✓ aldose reductase is as key in the polyol pathway is reported to catalyze the reduction of glucose to sorbitol. In normal tissue aldose reductase has low substrate affinity to glucose, so that the conversion of glucose to sorbitol is little catalyzed. However, in diabetes mellitus, the increased availability of glucose in insulin-insensitive tisssues such as lens, nerve, and retina leads to the increased formulation of sorbitol through the polyol pathway. Sorbitol does not readily diffuse across cell membranes and intracellular accumulation of sorbitol has been implicated in the chronic complications of diabetes such as cataract, neuropathy, and retinopathy. These findings suggest that alodose reductase inhibitor prevent the conversion of glucose to sorbitol and may have the capacity of preventing and/or treating several diabetic complications. Myrcia multiflora exhibited potent inhibitory activity against rat lens aldose reductase [9]
- ✓ The leaves of Myrcia multiflora D.C. have been extensively used as a specific remedy for diabetes in south American countries and are commonly called “plant insulin” were found to exhibit inhibitory activities on aldose reductase and α -glucosidase and on the increase in serum glucose level in sucrose-loaded rats in alloxan induced diabetic mice. [5]

Myrciacitrins from leaves of M. multiflora were found to schow potent inhibitory activity against rat lens aldose reductase. Myrciacitrin IV showed the most potent activity, although it had less activity than epalrestat, a commercial synthetic aldose reductase inhibitor. [5]

http://images.google.com.br/imgres?imgurl=http://www.bio.uu.nl/~herba/Guyana/VTGG/Myrtaceae/Myrcia/slides/Myrcia%2520multiflora%25201.JPG&imgrefurl=http://www.bio.uu.nl/~herba/Guyana/VTGG/Myrtaceae/Myrcia/slides/Myrcia%2520multiflora%25201.html&h=600&w=640&sz=35&tbnid=0cOX2h8DjfkJ:&tbnh=126&tbnw=135&hl=pt-BR&start=2&prev=/images%3Fq%3DMyrcia%2Bmultiflora%26hl%3Dpt-BR%26lr%3D%26sa%3DN

Abstracts

Antidiabetic principles of natural medicines. V. Aldose reductase inhibitors from Myrcia multiflora DC. (2): Structures of myrciacitrins III, IV, and V.

Matsuda H, Nishida N, Yoshikawa M.

Chem. Pharm. Bull. (Tokyo); 50(3): 429-31, 2002 Mar.

Following the characterization of myrciacitrins I and II and myrciaphenones A and B, three new flavanone glucosides, myrciacitrins III, IV, and V, were isolated from the leaves of Brazilian Myrcia multiflora. The structures of new myrciacitrins were elucidated on the basis of physicochemical and chemical evidence. Myrciacitrins were found to show potent inhibitory activity on aldose reductase.

Antidiabetic principles of natural medicines. II. Aldose reductase and alpha-glucosidase inhibitors from Brazilian natural medicine, the leaves of Myrcia multiflora DC. (Myrtaceae): structures of myrciacitrins I and II and myrciaphenones A and B.

Yoshikawa M, Shimada H, Nishida N, Li Y, Toguchida I, Yamahara J, Matsuda H.

Chem Pharm Bull (Tokyo). 1998 Jan;46(1):113-9.

The methanolic extract and ethyl acetate-soluble portion from a Brazilian natural medicine, the leaves of Myrcia multiflora DC., which has been used as a specific medicine against diabetes, were found to show inhibitory activities on aldose reductase and alpha-glucosidase and on the increase of serum glucose level in sucrose-loaded rats and in

alloxan-induced diabetic mice. From the ethyl acetate-soluble portion, new flavanone glucosides, myrciacitrins I and II, and new acetophenone glucosides, myrciaphenones A and B, were isolated together with several known compounds such as five flavonol glycosides, myricitrin, mearnsitrin, quercitrin, desmanthin-1, and guaijaverin. The structures of new compounds were determined on the basis of physicochemical and chemical evidence. The principal components of this natural medicine including new glucosides, myrciacitrin I and myrciaphenone B, were found to show potent inhibitory activities on aldose reductase and alpha-glucosidase.

Plants as hypoglycemic agents

Ciênc. cult. (Säo Paulo);49(5/6):354-8, Sept.-Dec. 1997. tab, graf.

The world over, many plants are being used successfully - mainly in the form of teas - to counteract the effects of diabetes; and Brazil is no exception. This is especially true for patients suffering from noninsulin dependent (type II) diabetes. The article first summarizes the mechanisms reported in the scientific literature which explain hypoglycemic activity in plants. These include: Inhibition of the intestinal absorption of glucose; inhibition of alpha-glucosidase; and protection of the beta-pancreatic cells and of the liberated insulin. Also shown is the hypoglycemic activity of glycans. In a second section experimental results are presented with three plants widely used in Brazil as hypoglycemic agents: Myrcia multiflora (Lam.) D.C. (pedra-ume-caá); Punica granatum L. (roma, pomegranate); and Chrysobalanus icaco (abajeru). The experimental results show the activity of the plant extracts in the inhibition of the intestinal absorption of glucose. (AU).

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