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AN ANTIPARASITIC GLYCOSYLATED FLAVONOID FROM LEAVES OF *Petiveria alliaceae* L. (PHYTOLACCACEAE)

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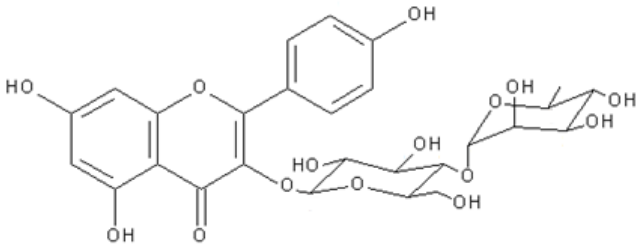
The genus *Petiveria* is a member of the Phytolaccaceae and comprises approximately 100 species, described in several regions of South and Central America as well as in Africa [1]. *P. alliaceae* has been used in several ethnomedicinal proposes and, phytochemically, accumulates different natural products such as flavonoids, triterpenes, polisulfides, and coumarins [1,2]. In continuation with our phytochemical studies on bioactive Brazilian plant species, in this work, the leaves of *P. alliaceae* were collected in "Parque do Pereque", Cubatão, SP. The dried plant material (18 g) was extracted with hexane followed by MeOH. The antiparasitic activity of MeOH extract was evaluated against promastigote forms of *Leishmania (L.) infantum* and displayed 50% of parasite death at 200 µg/mL. Aiming the identification of bioactive compounds, the crude extract was chromatographed over Sephadex LH-20 (MeOH as eluent) to afford nine groups (I – IX). As the bioactivity was detected in groups II, VI, VIII and IX, these were purified by chromatographic steps to afford the flavonoids sakuranetin, quercetin and patuletin, as previously reported [3]. Fractionation of group II afforded one bioactive fraction composed by a yellow amorphous solid. Its HRESIMS spectrum showed a deprotonated peak at *m/z* 593.1562 $[M - H]^-$, corresponding to molecular formula $C_{27}H_{30}O_{15}$. ^{1}H NMR spectrum (300 MHz, DMSO-d_6) showed signals attributed to anomeric hydrogens at δ 5.43 (s) and δ 5.66 (d, *J* = 3.0 Hz), which, is association to multiplets at δ 3.20 – 5.21 and one doublet at δ 1.24 (*J* = 6.0 Hz), suggested the occurrence of a glucoside and ramnoside moieties. This spectrum showed also four signals in the aromatic hydrogens region, consistent with the replacement pattern of the flavonol kaempferol: two broad singlets at δ 6.16/6.38, assigned to H-6/H-8 and two doublets at δ 8.03 (*J* = 8.0 Hz, H-2' and H-6') and 6.88 (*J* = 8.0 Hz, H-3' and 5'). Finally, comparison of obtained spectrometric data with those reported in the literature [4] allowed the identification of kaempferol-3-O-β-D-glucopyranosyl-(1→4)-α-L-rhamnopyranoside. This compound was previously reported in *Oxandra sessiliflora* (Annonaceae) [4] being the first occurrence of this compound in Phytolaccaceae family. After evaluation, this compound showed activity against promastigote form of *L. (L.) infantum* with IC_{50} = 17.3 µg/mL, lower than the standard drug pentamidine (IC_{50} = 22.1 µg/mL) and selectivity index determined as 3.2 (cytotoxicity tested against NCTC cells). In conclusion, this study allowed the isolation and identification of one rare bioactive glycosylated flavonoid, described for the first time in this specie.



References:
[1] Benevides, P.J.C., Young, M.C.M., Giesbrecht, A.M., Roque, N.F. and Bolzani, V. da S., 2001. Antifungal polysulphides from *Petiveria alliacea* L. *Phytochemistry*. 57: 743-747.
[2] Barbosa, F.S., Leite, G.F.L.D., Martins, E.R., Guanabens, R.E.M. and Silva, F.W.S., 2009. Métodos de extração e concentração no efeito inseticida de *Ruta graveolens* L., *Artemisa verlotorum* Lamote e *Petiveria alliacea* L. a *Diabrotica speciosa* Germar, Rev. Bras. PI. Med. 11: 221-229.
[3] Sessa, D.P., Pinto, E.G., Tempone, A.G., Sartorelli, P. and
Lago, J.H.G., 2015. Busca por compostos com ação antiparasitária nas folhas de *P. alliacea* L. (Phytolaccaceae). 2015. Livro de Resumos da 38º Reunião Anual da Sociedade Brasileira de Quimica (SBQ).
[4] Sousa, E.A.; Silva, A.A.C.A.; Cavalheiro, A.J.; Lago, J.H.G.; Chaves, M.H., 2014. A new flavonoid derivative from leaves of *Oxandra sessiliflora* R. E. Fries. J. Braz. Chem. Soc. 25: 704-708.