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POSTER 19

ANTITRYPANOSOMAL COMPOUNDS FROM THE ESSENTIAL OIL AND EXTRACTS OF *KEETIA LEUCANTHA* LEAVES WITH INHIBITOR ACTIVITY ON *TRYPANOSOMA BRUCEI* GAPDH

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Keetia leucantha is a West African tree used in traditional medicine to treat several diseases among which parasitic infections. The dichloromethane extract of leaves was previously shown to possess growth inhibitory activities on *Plasmodium falciparum*, *Trypanosoma brucei brucei* and *Leishmania mexicana mexicana* with low or no cytotoxicity (>100 µg/ml on human normal fibroblasts) (1, 2). In continuation of our investigations on antitrypanosomal compounds, we analyzed the major triterpenic acids in this dichloromethane extract by LC–MS and also the leaves essential oil obtained by hydrodistillation by GC-FID and –MS. Forty-one compounds were identified in the oil whose percentages were calculated using the normalization method. The essential oil, seven of its constituents and the three triterpenic acids were evaluated for their antitrypanosomal activity on *Trypanosoma brucei brucei* bloodstream forms (*Tbb* BSF) and procyclic forms (*Tbb* PF) to identify an activity on the glycolytic process of trypanosomes. The oil showed an IC_{50} of 20.9 µg/ml on *Tbb* BSF and no activity was observed on *Tbb* PF. The best antitrypanosomal activity was observed for ursolic acid with IC_{50} of 2.5 and 6.5 µg/ml respectively on *Tbb* BSF and *Tbb* PF. The inhibitory activity on a glycolytic enzyme of *T. brucei*, glyceraldehyde-3-phosphate dehydrogenase (GAPDH), was also evaluated for betulinic, olenaolic and ursolic acids, phytol, α- and β-ionone. The three triterpenic acids and β-ionone showed inhibitory activities on GAPDH with oleanolic acid being the most active with an inhibition of 72.63% at 20 µg/ml. These results may in part explain antitrypanosomal activities (3).

[1]Bero, J., Ganfon, H., Jonville, M.C., Frederich, M., Gbaguidi, F., Demol, P., Moudachirou, M., Quetin-Leclercq, J., 2009. Journal of Ethnopharmacology 122, 439–444. [2]Bero, J., Hannaert, V., Chataigne, G., Herent, M.-F., Quetin-Leclercq, J., 2011. Journal of Ethnopharmacology 137, 998–1002. [3]Bero, J., Beaufay C., Hannaert, V., Herent, M.-F., Michels P.A., Quetin-Leclercq, J., 2011. Phytomedicine 20, 270– 274.

POSTER 20

ANTICANCER EFFECT OF ROOTS AND SEEDS EXTRACT OF ALGERIAN *PEGANUM HARMALA* L.

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Peganum harmala L. (Zygophyllaceae) is distributed in a large area of the world and can grow in semi-arid and pre-desert regions. This plant is rich in alkaloids, including β-carbolines derivatives (harmine, harmaline, harmalol, harman, tetrahydroharmine and harmol) and quinazoline derivatives (vasicine and vasicinone). Because of its wild spectrum of physiological activity, Peganum harmala found its way in traditional medicine. Its alkaloids have been found to present anticancer, antibacterial and antiviral activities. However, the most important effect of harmala alkaloids is certainly the inhibition of monoamine oxidases that leads to hallucinogen effects. Indeed, evidence indicates that harmine and harmaline are hallucinogenic in humans. In this study, we evaluated the cytotoxic effects of roots and seeds extracts on a human lung adenocarcinoma epithelial cell line (A549), a human glioblastoma cell line (U373), a human glioma cell line (Hs683), a human melanoma cell line (SK-MEL-28), a mouse melanoma cell line (B16F10) and a human breast cancer cell line (MCF7) (0.01 – 100 µg/ml). The cell viability was determined using MTT test. Both extracts showed potent antiproliferative activity against all cells in a dose-dependent manner, IC50 ranging from 1 to 13 µg/ml. In vitro quantitative videomicroscopy analyses focused on anti-proliferative effects on A 549 cell lines and indicated that the extract exhibit a cytostatic effect.