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Two hydroxyphenyl ethyl octalactones from the leaves of *Globimetula braunii* mistletoe growing on *Piliostigma thonningii*

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Globimetula braunii mistletoe is widely distributed in the tropical countries including Ghana, Cameroun and Nigeria where it is amongst the ingredients of many herbal medicines. The plant is used as a recipe for treating hypertension, rheumatism, epilepsy, infertility, stomach problems, diabetes and as a laxative. Most of these ethno-pharmacological uses have been validated scientifically on the crude extract. Inspite of the considerable information on biological properties of *G. braunii* mistletoe, there is an acute paucity of data on the secondary metabolites responsible for the observed effects. The ethanolic extract of *G. braunii* leaves, after successive extraction with various organic solvents gave different fractions and the ethyl acetate portion afforded two new hydroxyphenyl-ethyl octalactones; 4,6-dihydroxy-8-[2-(4-hydroxy-phenyl)-ethyl]-oxocan-2-one and 6-hydroxy-8-[2-(4-hydroxy-phenyl)-ethyl]-5,6,7,8-tetrahydro-oxocin-2-one. The structures of the two isolated compounds were determined by spectroscopic analyses, particularly, the 1 and 2D - NMR. The two compounds isolated in this work might probably, contribute to the observed biological activities and the recently reported anti-convulsant effect exhibited by the ethyl acetate fraction of this plant.

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Determination of some non-sedating antihistamines via their native fluorescence and derivation of some quantitative fluorescence intensity - structure relationships

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A validated simple, novel, and rapid spectro-fluorimetric method was developed for the determination of some Non-Sedating Antihistamines (NSAs); namely Cetirizine (CTZ), Ebastine (EBS), Fexofenadine (FXD), and Loratadine (LOR). The method is based on measuring the native fluorescence of the cited drugs after protonation in acidic media and studying their quantitative fluorescence intensity – structure relationships. There was a linear relationship between the relative fluorescence intensity and the concentration of the investigated drug. Under the optimal conditions, the linear ranges of calibration curves for the determination of the studied NSAs were 0.10–2.0, 0.20–6.0, and 0.02–1.0 μg/mL for (CTZ, FXD), (EBS), and (LOR); respectively. The factors affecting the protonation of the studied drugs were carefully studied and optimized. The method was validated according to ICH guidelines. The suggested method is applicable for the determination of the four investigated drugs in bulk and pharmaceutical dosage forms with excellent recoveries (97.67 - 103.80%). Quantitative relationships were found between the relative fluorescence intensities of the protonated drugs and their physicochemical parameters namely: the pKa, log P, connectivity indexes (χv) and their squares. Regression equations (76) were obtained and not previously reported. Six of these equations were highly significant and used for the prediction of RFI of the studied NSAs.

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