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Identification of potential drug candidates in the anti-ulcer bark extract of *Entandrophragma* utile

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Introduction: Entandrophragma utile bark extract limits haemorrhagic damage caused by absolute ethanol or other ulcerogens; inhibits gastric acidity and peptic activity; and stimulates gastric mucus secretion.1 We screened the bark for drug chemical candidates to be studied for anti-ulcer mechanisms.

Methods: Fresh bark, dried and pulverised, was suspended as 2g powder in 25ml solvent and extracted over 10days at 4C with occasional shaking. Filterate was subjected to gas chromatography-mass spectrometry (GC-MS) screening (Model QP2010 Ultra, Shimadzu, Japan) at the Federal Institute of Industrial Research, Oshodi (FIIRO), Lagos, Nigeria. MS scan range was 40-550 (m/z). With a NIST Version (2011) MS data library (>62,000 patterns), we compared the spectra obtained and compounds present in bark extracts were identified by name, molecular weight, and structure.

Results: Chemical components identified in the acetone extract of E. utile by GC-MS Peak are: 4-hydroxy-4-methyl-2-pentanone; 1-isocyano-butane; propanesulfonylacetonitrile; 9-octadecanamide, (Z)-; oxalic acid, butyl propyl ester; and 3,6-heptanedione. Chemical components identified in the ethanolic extract are: ethoxyacetylene; oxalic acid allyl butyl ester; and oxalic acid butyl propyl ester.

Conclusion: Drug candidates were: noxious oxalic acid which may be comparable to cytoprotective 10% ethanol;5 2-pentone analogues which may modulate gut prostaglandin production;6 and 9-octadecenamide (oleamide), CB1 receptor agonist which allosterically modulates GABAA receptors and potentiates 5-HT7 serotonin receptor responses and may modulate gut serotonin mechanisms such as vascular tone, hemostasis, blood clotting, and cell proliferation that may be involved in ulcer healing. Thus we found three potential candidates for screening as anti-ulcer drugs in the bark of E. utile.

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