BIOACTIVITY GUIDED ISOLATION OF A NOVEL ANTI-INFLAMMATORY AND ANTIBACTERIAL FLAVONOL AND OXYCHROMONE FROM THE PLANT PILIOSTIGMA RETICULATUM (SCHUM)

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Piliostigma reticulatum (Schum) is a plant used throughout tropical Africa in treating varieties of ailments, which includes ulcers, cough, wounds, chest pains, gingivitis, fever, gonorrhea etc.In a screening of fifteen plant species from an inventory of some African medicinal plants for anti-inflammatory activity, *Piliostigma reticulatum* leaf extract was found to possess highly moderate but specific prostaglandin synthesis inhibitory activity. The plant extract was also found to exhibit antibacterial activity against *Staphylococcus aureus* NCTC 10788, *Escherichia coli* NCTC 9001, *Bacillus subtilis* NCTC 8236 and *Proteus vulgaris* NCTC 4175. This observation prompts in looking into the constituents present in *Piliostigma reticulatum* leaves with its widespread ethnomedicinal uses. A total of Ten compounds were isolated and their structures were unambiguously established by spectroscopic methods including infrared and ultraviolet spectroscopy, high-resolution mass spectrometry and Nuclear magnetic resonance spectrometry. Four of the isolated compounds were Novels. This includes the first ever *P1*C-Methyl-p-phenoxychromonol (Piliostigmol), *P2* 6,8-Di-C-Methylquercetin 3,7,3′-trimethyl ether, *P3* 6,8-Di-C-Methylquercetin 3,3′-dimethyl ether and the *P4* 6,8,3′-tri-C methylquercetin 3,7-dimethyl ether. Four known C-Methyl flavonols were also isolated from *P. reticulatum* for the first time and were *P7* 6-C-Methylquercetin 3-methyl ether, *P8* 6-C-Methylquercetin 3,7,3′-trimethyl ether, *P9* 6,8-Di-C-methylkaempferol 3-methyl ether and *P10* 6,8-Di-C-methylkaempferol 3,7-dimethyl ether. All of the isolated compounds were tested for their ability to inhibit prostaglandin synthesis and 6-CMethylquercetin 3,7,3′-trimethyl ether was found to be the most active (IC =6.58 mM) being about 300 times as 50 potent as aspirin.