# PENTACYCLIC TRITERPENES FROM *Rawsonia lucida* AND ISOFLAVONOIDS FROM *Erythrina burttii*; ANTI-OXIDANT ACTIVITIES

BY



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I56/7132/99



A thesis submitted in partial fulfillment for the degree of Master of Science at the University of Nairobi.

# ABSTRACT

The stem bark of *Rawsonia lucida* (Flacourtiaceae) was successively extracted with dichloromethane ($CH_2Cl_2$) and methanol (MeOH). Silica gel chromatography of the $CH_2Cl_2$ extract led to isolation of five compounds. These were characterized as the pentacyclic friedelane-type triterpenes, friedelin (**1**), friedelane-1,3-dione (**2**), 3-oxofriedelan-28-al (**3**), 3-oxofriedelan-28-ol (**4**) and 28-hydroxyfriedelane-1,3-dione (**5**). The identification of these compounds was based on spectroscopic evidence mostly NMR and MS. Although friedelane-type triterpenes have been reported from some genera of the family Flacourtiaceae, this is the first report of their occurrence in the genus *Rawsonia*. Previous work has showed that *R. lucida* exhibit anti-malarial activity with $IC_{50}$ value of 29.8 μg/ml against *Plasmodium falciparum* strains. Compounds **3, 4** and **5** showed slight anti-malarial activities with $IC_{50}$ values of 97.9, 147.3 and 17.4 μg/ml, respectively.

The root bark of *Erythrina burttii* (Leguminosae) was similarly extracted with $CH_2Cl_2$ and MeOH successively and combined. The combined extract was subjected to chromatographic separation that led to the isolation of five compounds. These compounds were characterized as a long chain cinnamyl ester derivative [erythrinasinate (**6**)], two new isoflav-3-enes [7,4-dihydroxy-2'-methoxy-6-(1",1"-dimethylallyl)isoflav-3-ene (trivial name: burttinol A) (**7**), 4'-hydroxy-2"-methoxy-(2",2"-dimethylpyrano[5",6":8,7])isoflav-3-ene (trivial name: burttinol B) (**8**), a new pterocarpene [3-hydroxy-9-methoxy-10-prenylpterocarpene (trivial name: 6a,11a-dehydroerythrabyssin I (**9**)] and 4-(1,1-dimethylallyl)benzene-1,3-diol (**10**). Phenolic

compounds especially isoflavonoids are common in the genus *Erythrina*, however, prior to this report only one isoflav-3-ene and one pterocarpene have been reported from this genus.

The $CH_2Cl_2$ and MeOH extracts of *E. burttii* exhibited radical scavenging properties when tested with methanolic solution of a stable radical, 2,2-diphenyl-1-picrylhydrazyl (DPPH). All the five compounds (**6-10**) isolated from the root extracts of *E. burttii* also showed radical scavenging activities on DPPH. The acetate derivatives, burttinol A-diacetate (**7a**) and burttinol B-monoacetate (**8a**) were prepared and both derivatives were inactive showing the importance of free phenolic group for the activity. Furthermore, the radical scavenging activity of the major compound, burttinol A, was assessed using spectrophotometric method and found to have an $EC_{50}$ value of 3.31μg/ml (9.79μM).