

Abstract

Malaria, transmitted by mosquitoes of the genus *Anopheles*, is the most important parasitic disease worldwide. It affects 40% of the global population mostly within the tropical world. Yearly, over one million children under the age of five die in Africa as a result of malaria. The genus *Turraea* belongs to the family *Meliaceae*. *Meliaceae* is characterized by the presence of tetranortriterpenoids (limonoids), a group of compounds that exhibit a wide variety of biological properties including anti-insect, anti-protozoa, anti-bacterial and anti-fungal activities. In the present study, the root bark of *T. abyssinica* and *T. cornucopia* were extracted with methanol and partitioned between water and chloroform. The activity of crude methanol and chloroform extracts was tested against larvae and adults of *Anopheles gambiae sensu stricto* (Diptera: Culicidae). As larvicides, the methanol extract of *T. cornucopia* was the most active (LD₅₀ 202 ppm). The chloroform extract of *T. cornucopia* was the most active as an adulticide (LD₅₀ 302.1 ppm). Partitioning of the methanolic extracts between chloroform and water, followed by silica gel chromatography of the organic extract gave limonoids-rich fractions that had larvicidal activity higher than those of the corresponding crude extracts. Column chromatography of the chloroform fraction followed by semi-preparative HPLC yielded 1 α -12 α -diacetoxy-1,2-dihydro-7-deacetyl-3 β -7 α -dihydroxyazadirone, 12 α -acetoxy-7-deacetylazadirone and mzikonone. The structures of these compounds were elucidated using spectroscopic methods (IR UV, MS, ¹H-, ¹³C- NMR, gradient COSY, and gradient HMBC experiments). Stereo chemical assignments were made by gradient NOE spectroscopy. These plants offer a significant potential for mosquito control as larvicides and adulticides.