

Abstract

The antimicrobial activity of the extracts and pure compounds from the sponge *Axinella infundibuliformis* collected Mombasa, the Kenyan Coast have been reported. The pure compounds were purified and characterized through various chromatographic and spectroscopic techniques. Three triterpenoid compounds were isolated and identified from *Axinella infundibuliformis*. These were 3 β -Hydroxylup-20(29)-ene (1), 3 β -Hydroxylup-20(29)-en-28-oic acid (2) and 3-Oxo-lup-20(29)-en-28-oic acid (3). The hexane, dichloromethane and methanol crude extracts (10 mg/ml) of *Axinella infundibuliformis* showed strong antibacterial activity against methicilin resistant *Staphylococcus aureus* with inhibition zone diameters of 24.7 ± 0.05 , 22.0 ± 0.35 and 12.7 ± 0.09 mm respectively. The MIC values for dichloromethane and hexane extracts were then evaluated as at 6.25 mg/mL and 3.12 mg/mL respectively. The antifungal tests for *Axinella infundibuliformis* against *Candida albicans* by all the three extracts showed mild activity with inhibition zone diameters of 6.7 ± 0.02 , 6.0 ± 0.04 , and 5.7 ± 0.03 mm respectively. In addition, the dichloromethane and hexane extracts exhibited low activities against *Microsporum gypseum* (6.3 ± 0.01 mm) and *Cryptococcus neoformans* (6.3 ± 0.07 mm) respectively. Of the three compounds isolated, 3 β -Hydroxylup-20(29)-ene (24.0 ± 0.09 mm diameter) exhibited strong activity against *Pseudomonas aeruginosa*, while 3 β -Hydroxylup-20(29)-en-28-oic acid (7.0 ± 0.06 mm diameter) and 3-Oxo-lup-20(29)-en-28-oic acid (10.7 ± 0.08 mm diameter) showed moderate activity against *P. aeruginosa*. Gentamycin (Standard drug 10 μ g/disc) had an inhibition zone diameter of 16.0 ± 0.01 mm.