

## Free radical scavenging effect of a few selected Sri Lankan marine sponges (Demospongiae)

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Sponges are one of the most interesting taxa due to the presence of a large number of bioactive secondary metabolites. Despite the high diversity of Sri Lankan marine sponges, the potential of using these as a source of bioactive compounds has been scarcely investigated. The role of free radicals and reactive oxygen species in the pathogenesis of many diseases such as diabetes, arthritis, cancer etc is well established. This study assessed the *in vitro* free radical scavenging effect of 4 different Sri Lankan marine sponge species.

Sponges were collected from Kaththankudi, Batticaloa (N=3) and from Unawatuna, Galle (N=1) Sri Lanka. The class of the sponges was confirmed as Demospongiae, by spicule analysis. Collected samples were repeatedly extracted in absolute methanol and dichloromethane, followed by rota evaporation. The crude extracts were tested for their 2,2-diphenyl-1-picrylhydrazil(DPPH), nitric oxide(NO) and Superoxide(SO) radical scavenging activities using standard methodology. Dose dependant radical scavenging effect was observed only in the sample collected from Unawatuna. While the IC 50% value for free radical scavenging effect of this sponge against DPPH was 402.63 µg/ml, no activity was observed in this sample for NO and SO. The three samples collected from Batticaloa did not show free radical activity against the three free radicals tested.

Thin Layer Chromatography (TLC) of the crude extract which showed free radical scavenging activity against DPPH indicated the presence of high polar compounds. These were identified both in short and long UV wave length and with anisaldehyde spray indicating the presence of saturated and unsaturated polar secondary metabolic compounds, respectively.

In conclusion, this study demonstrated that a yet to be identified Sri Lankan marine sponge species of class Demospongiae, contains saturated and unsaturated polar secondary metabolite(s) that possess *in vitro* free radical scavenging effect against DPPH.

*Financial assistance by HETC project SJP/O-AS/N1 is acknowledged.*