

## Antioxidant Properties in Four Cyanobacteria sp., Isolated from Fresh Water Bodies of Sri Lanka

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The aim of this investigation was to study the total phenolic content (TPC), total flavonoid content (TFC), antioxidant activity, phycobiliproteins and active compounds in four cyanobacterial species, i.e., *Oscillatoria sp.*, *Lyngbya sp.*, *Microcystis sp.* and *Spirulina sp.* isolated from fresh water bodies of Sri Lanka. Water sample was collected from different fresh water bodies representing two climatic zones of Sri Lanka that is dry zone and wet zone and was filtered through 20 µm planktonic net. The retentate was cultured in BG11 and GO media recommended for cyanobacteria. Frequent sub culturing was carried out to isolate uni-algal culture. Isolates were identified morphologically under microscope (40X magnification). In the present study, *Lyngbya sp.*, showed highest TPC (5.02±0.20 mg/g), TFC (664.07±19.76 mg/g) and total phycobiliproteins (127.01 mg/g) value. The ferric reducing antioxidant power (FRAP) was recorded highest in *Oscillatoria sp.* (39.63±7.02) whereas the 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging activity was also reported the highest in *Oscillatoria sp.* (465.31±25.76) followed by *Lyngbya sp.* (248.39±11.97). In FTIR spectroscopy *Lyngbya sp.* does not show any N-H stretching band which is ultimately responsible for the inhibition of antioxidant activity. The study revealed that *Lyngbya sp.* and *Oscillatoria sp.* can be an excellent source for food, pharmaceutical and other industrial use.

**Keywords:** Cyanobacteria, Total Phenolic Content (TPC), Total Flavonoid Content (TFC), DPPH, FRAP, Antioxidant, Phycobiliproteins