

Total polyphenol content, anti - oxidative and anti - bacterial properties of seahorses traded as traditional medicine

ABSTRACT

The present study examined the total polyphenol content (TPC), anti-oxidative and anti-microbial properties of various extracts of male and female seahorses, *Hippocampus barbouri*. The TPC was assessed by the Folin-Ciocalteu's method, while the anti-oxidative activities were determined by two different methods; scavenging 1,1-diphenyl-2-picrylhydrazyl (DPPH) free radicals and ferric reducing ability plasma (FRAP) assays. The antimicrobial properties of *H. barbouri* extracts were evaluated using disc diffusion method. The TPC content extracts of *H. barbouri* ranged from 2.99 to 5.00 mg GAE/g. The ability to reduce DPPH was strongest in ethanol extract and lowest in ethyl acetate extract. Contradictory, the antioxidant property of *H. barbouri* in ethanol extracts was much lower than in ethyl acetate and methanol extracts. The values of TPC, DPPH and FRAP assays showed the existence of a significant negative relationship between DPPH and FRAP assays ($r = 0.909$, $p < 0.01$). Only male ethyl acetate extract of *H. barbouri* showed anti-microbial activity against both *Bacillus cereus* and *Staphylococcus aureus*. These findings indicated that *H. barbouri* is a potential source of natural anti-oxidant and possess some anti-microbial activities against the harmful bacteria strain.