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## Free radical scavenging, antioxidant activity, phenolic, alkaloids contents and inhibited properties against $\alpha$ -amylase and invertase enzymes of stem bark extracts *Coula edulis* B

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**Background:** It is clear that phytochemical constituents of plants in relation exhibit free radical scavenging, antioxidant and glycosylation properties. This study investigated the *in vitro* antioxidant and free radical scavenging, inhibited activities against  $\alpha$ -amylase and invertase enzymes of stem bark extracts *C. edulis* (Olacaceae).

**Methods:** Four extracts (hexane, dichloromethane, ethanol and aqueous) from the barks of *C. edulis* were used in this study. Colorimetric *in vitro* methods were used to evaluate free radical scavenging activity DPPH, ABTS, NO, OH, antioxidant capacity, glycosylation activity, inhibition of  $\alpha$ -amylase and invertase activities, phenolic, flavonoid and alkaloid contents.

**Results:** *C. edulis* extracts (CEE) had a higher scavenging potential on the 2, 2-diphenyl-1-picrylhydrazyl (DPPH), hydroxyl (OH), nitrite oxide (NO), 2,2-azinobis (3-ethylbenzthiazoline)-6-sulfonic acid (ABTS) radicals and glucose scavenging with the IC<sub>50</sub> varied between 41.95 and 36694.43  $\mu$ g/ml depending on the solvent of extraction. The ethanol extract of *C. edulis* stem bark (CE EtOH) showed the highest polyphenolic (289.10+30.32), flavonoid (1.12+0.09) and alkaloids (18.47+0.16) content. All the tested extracts demonstrated a relative high inhibition potential against  $\alpha$ -amylase and invertase digestive enzymes activities.

**Conclusion:** This study suggests that, CEE exhibited higher antioxidant potential and significant inhibition potential against digestive enzymes.

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