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CONCLUSION

Phytochemical screening, chemical constituent and bioactivity of some *Ophiorrhiza* species are namely *O. trichocarpon* Bl., *O. rugosa* Wall and *O.* aff. *nutans* Cl. *ex* Hk. f. were investigated. Phytochemical screening showed that there are alkaloids, coumarin, anthaquinone glycoside in all crude methanolic extracts of three *Ophiorrhiza* species. Scopoletin saponin was present in crude methanolic extract of *O. trichocarpon* Bl. and *O.* aff. *nutans* Cl. *ex* Hk. f. All crude extracts of *Ophiorrhiza* species showed antimicrobial activity. The crude *O. trichocarpon* Bl., *O. rugosa* Wall. and *O.* aff. *nutans* Cl. *ex* Hk.f. extracts possessed antioxidant activities. The crude extract of *O.* aff. *nutans* Cl. *ex* Hk.f. gave the highest antioxidant capacity (IC_{50}= 2.76 mg mL^{-1}), whereas the crude *O. trichocarpon* Bl. extract showed the lowest antioxidant capacity (IC_{50}= 5.09 mg mL^{-1}). Moreover, the crude ethyl acetate extract of three *Ophiorrhiza* species showed cytotoxicity against Vero cells, and also inhibited against small cell lung cancer and KB-Oral cavity cancer. Only *O. trichocarpon* Bl. and *O.* aff. *nutans* Cl. *ex* Hk.f. extracts showed inhibition MCF7-Breast cancer, except *O. rugosa* Wall extract.

The crude hexane, dichloromethane, ethyl acetate and n-butanol extracts of *O.* aff. *nutans* Cl. *ex* Hk. f. possessed antioxidant activities. The ethyl acetate extract gave the highest antioxidant capacity (IC_{50}=1.99 mg mL^{-1}), whereas the hexane extract showed the lowest antioxidant capacity (IC_{50}=5.71 mg mL^{-1}). The crude hexane, dichloromethane, ethyl acetate and n-butanol extracts gave inhibition zones against *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Candida albicans*. The crude hexane, dichloromethane and ethyl acetate extracts showed inhibition zones against *Trichophyton mentagophyte* except the crude n-butanol extract. Only the crude ethyl acetate extract gave inhibition zone against *Escherichia coli*. The identification of the isolated compounds were carried out on the physical and spectroscopic properties and confirmed by comparison with the published data in

literatures. Beta-sitosterol, stigmasterol, ursolic acid and scopoletin were isolated from crude dichloromethane extract of *O.* aff. *nutans* Cl. *ex* Hk. f. But volmifoilol or blumenol A and Harman were also isolated from crude ethyl acetate extract (crude alkaloids). *Ophiorrhiza* species exhibited antimicrobial, anticancer and antioxidant activities. They also consisted of alkaloids, steroids, triterpene and terpenoid which may pay important role in drug development.