

**Studies on Nepalese Medicinal Resources:
Chemical Analysis and Biological Activities of *Diplomorpha canescens* and their
Comparison with *Diplomorpha ganpi* and *Diplomorpha sikokiana* from Japan**

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Diplomorpha canescens is a widely abundant plant in the hilly region of Nepal and traditionally used as the remedy for toothache. Roots and flowers of *D. canescens* are used for the treatment of various disorders in traditional Chinese medicine. In addition, it has commercial importance as the main ingredient for the preparation of handmade paper and current paper currency. Therefore this study is aimed to explore the medicinal and commercial importance of *D. canescens* from Nepal. For this purpose, detailed chemical analysis was carried out on one species *D. canescens* from Nepal and two species *D. ganpi* and *D. sikokiana* from Japan. In total, 8 new compounds together with 40 known compounds were isolated from *D. canescens* and their structures were elucidated based on the mainly spectroscopic and some chemical methods. In addition, 2 new and 33 known compounds from *D. ganpi* and 23 known compounds from *D. sikokiana* were isolated and identified. All these compounds from *D. canescens* and *D. ganpi* were reported for the first time. Moreover, antioxidative activity and tyrosinase inhibitory activity on some of the isolated compounds were carried out.

Six new compounds such as (2*R*,3*S*)-6,8-di-*C*-methyldihydrokaempferol (1), (2*R*,3*R*)-6,8-di-*C*-methyldihydrokaempferol (2), farrerol 4'-*O*- β -D-glucopyranoside (3), diplomorphanin A (4) diplomorphanin B (5) and diplomorphanone A (32) together with 26 known compounds from the aerial parts and 2 new compounds such as 14''-*O*-methyldihydrodaphnodorin B (33) and 14''-*O*-methyldaphnodorin J (35) along with 16 known compounds were isolated from the roots of *D. canescens*.

One new compound, pilloin 5-*O*- β -D-glucopyranoside (49) along with 22 known compounds from the stems and 1 new compound, diplomorphanone B (63) along with 12 known compounds from the roots of *D. ganpi* were isolated and their structure were identified.

Fourteen known compounds from the stems, 13 known compounds from the roots and 5 known compounds from the leaves of *D. sikokiana* were isolated.

