

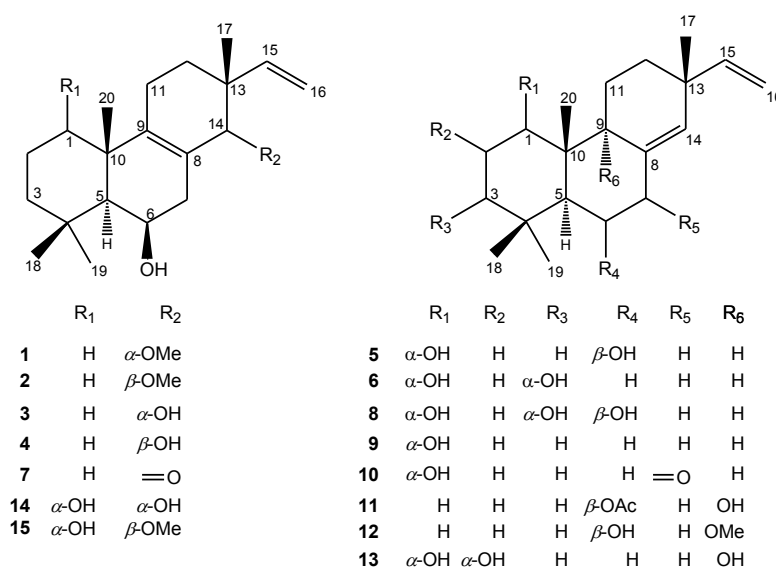
# Kaempulchraols A–O, New Diterpenoids from *Kaempferia pulchra* Rhizomes Collected in Myanmar and Their Antiproliferative Activity

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*Kaempferia pulchra* Ridl. is a perennial herb of the Zingiberaceae family. In Myanmar, this plant is locally known as “Shan-pan-oot”, and its rhizomes have been extensively used for the self-medication by cancer and AIDS patients.

In our ongoing research for the discovery of anticancer agents from Myanmar medicinal plants, we screened the crude extracts against a panel of five human cancer cell lines (A549, human lung cancer; HeLa, human cervix cancer; PANC-1 and PSN-1, human pancreatic cancer, MDA-MB-231, human breast cancer) and TIG-3, normal human primary fibroblast cells. We have observed that the CHCl<sub>3</sub> soluble extract of rhizomes of *K. pulchra* exhibited reasonable antiproliferative activity against the tested cancer cell lines. Thus, we have proceeded the isolation of its secondary metabolites by a combination of various chromatographic techniques. The identification of the isolated compounds via 1D and 2D NMR, and X-ray diffraction analyses afforded 15 new isopimarane diterpenoids, kaempulchraols A–O (1–15), and six known analogues [1, 2]. The antiproliferative activity of the isolated diterpenoids was assessed against the above mentioned cell lines. Among the compounds tested, kaempulchraol F (6) exhibited mild activity against the human pancreatic PSN-1 cell line with an IC<sub>50</sub> value of 12.3 μM, whereas kaempulchraol L (12) showed weak activity against the human pancreatic PANC-1 and PSN-1 cells with IC<sub>50</sub> values of 39.9 and 22.6 μM, respectively.

The present study highlighted that *K. pulchra* rhizome collected in Myanmar is a rich source of 1 α-hydroxy as well as 6 β-hydroxy bearing Δ<sup>8(9),15</sup> and/or Δ<sup>8(14),15</sup> isopimarane diterpenoids.



## References

- [1] Win, N. N.; Ito, T.; Aimaiti, S.; Imagawa, H.; Ngwe, H.; Abe, I.; Morita, H. DOI: 10.1021/acs.jnatprod.5b00108.  
 [2] Win, N. N.; Ito, T.; Aimaiti, S.; Kodama, T.; Imagawa, H.; Ngwe, H.; Asakawa, Y.; Abe, I.; Morita, H. (submitted)