



# New Norterpene Cyclic Peroxides from the Sponge *Diacarnus megaspinorhabdosa*

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## Abstract:

Chemical investigation of the n-hexane extract of the sponge *Diacarnus megaspinorhabdosa* has provided a series of norterpene cyclic peroxides, including three new norditerpene cyclic peroxides and five new norterpene peroxides together with four known norterpene peroxides: nuapapu A methyl ester, epimuqubilin B, methyl-2-epinuapapuinoate and methyl diacarnoate A. The structures of the new compounds were established on the basis of one and two dimensional NMR spectroscopic studies (<sup>1</sup>H, <sup>13</sup>C, COSY, HMQC, HMBC and ROESY) as well as on mass spectral analysis. The isolated compounds exhibited moderate (2–5 μg) to strong toxicity (0.01–0.10 μg) toward L5178Y (mouse lymphoma) and HeLa (human cervix carcinoma) while the same congeners showed weaker activity on the PC-12 (rat pheochromocytoma) cell line. Capon's empirical rules<sup>1</sup> were extensively used in this study to derive the relative stereochemistry at C-2, C-3 and C-6. Following Horeau's procedure, the peroxide ring was cleaved to yield its diol congener onto which the advanced Mosher method was utilized to confirm the stereochemistry obtained from Capon's empirical rules.

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