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A New Oxoaporphine Alkaloid from *Alphonsea Mollis* Dun.

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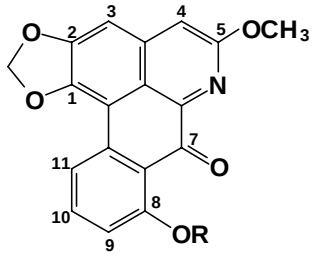
Abstract: A new oxoaporphine alkaloid, 1,2-methylene-dioxy-8-hydroxy-5-methoxy oxoapor-phine, was isolated from the stem barks of *Alphonsea mollis*. Its structure was established on the basis of spectral analysis and chemical correlation.

Keywords: *Alphonsea mollis*, oxoaporphine, 1,2-methylenedioxy-8-hydroxy-5-methoxy oxo-aporphine.

The genus *Alphonsea* (Annonaceae) comprises about thirty species growing in the tropical or subtropical area in Asia, of which six species were found in China. Three species of this genus have been studied chemically. Previous investigation on *A. mollis* resulted in isolation of some oxoaporphines, onychines and lignans[1-2]. The present paper reports the structure of a new oxoaporphine alkaloid 1,2-methylenedioxy-8-hydroxy-5-methoxy oxoaporphine **1** from *A. mollis.*



1 R=H

2 R=CH_3

Compound **1,** orange needles, mp 264-267°C (dec), showed positive reaction to Dragendorff's test on TLC. The MS showed the molecular formula of $C_{18}H_{11}NO_5$ (found 321.2263, req. 321.0637). An oxoaporphine skeleton was revealed by the UVλmax (lgε) at 221 (4.41), 245 (4.28), 278 (4.31), 311 (4.02) and 452 (3.86) nm, which was further confirmed by the typical [M-CO] peak in the MS[3-4]. The ^{1}HNMR spectrum showed the present of a methylenedioxy (δ6.41, 2H, s), a hydroxy (δ11.86, 1H, s, exchangeable by D_2O) and a methoxy (δ3.76, 3H, s) groups in **1**. The ^{1}HNMR also showed a typical singlet at δ7.61 (1H, s, H-3) which revealed the

methylenedioxy was located at C-1 and C-2. The signals at δ8.31 (1H, dd, J=8.0, 1.0Hz), 7.65 (1H, t, J=8.0Hz) and 7.16 (1H, dd, J=8.0, 1.0Hz) were due to H-9, H-10 and H-11 respectively, which were supported by downfield hydroxyl singlet at δ11.86. No typical doublets corresponding to H-4 and H-5 can be found, that meant there might be a substitute at C-4 or C-5. The singlet at δ7.83 (1H) showed the methoxy was located on C-5 by comparing with the ^{1}HNMR data of **2**. NOE test also confirmed the above prediction. An 8.7% enhancement on singlet at δ7.83 was found when irradiating the singlet at δ3.76. Thus, the structure for compound **1** was established as 1,2-methylenedioxy-8-hydroxy-5-methoxy oxoaporphine. Final proof of structure was provided by O-methylation of this new alkaloid using CH_2N_2 to afford the known compound, mollisine **2**[2].

References

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