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Isolation of ulceroprotectivec cucurbitane type triterpenoids from *Cucumis melo* seeds

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Medicinal plants are the richest bio-resources of drugs in traditional medicinal systems, modern medicines, folk medicines, intermediate and chemicals entitled for synthetic drugs. Plants provide a source of inspiration for novel drug development as they contain a vast array of substances that treat chronic diseases. *Cucumis melo* seeds have been traditionally used for treating various health ailments. The main aim of our current study is to isolate Cucurbitane-type triterpenoids from *Cucumis melo* seed extract and conduct antiulcerogenic activity of the isolated compound. Phytochemical investigations of methanolic seed extract of *Cucumis melo* was carried out which showed the presence of various important phytoconstituents. The main active constituents of *Cucumis melo* have shown a number of potent pharmacological activities. The isolation of Cucurbitane-type triterpenoids was carried out by column chromatography using methanolic seed extract of *Cucumis melo*. Mobile phase hexane and hexane-ethyl acetate (98:2) was used to run the column. TLC profiling was done simultaneously in an appropriate solvent system (hexane: ethyl acetate, 97:3). Various fractions were collected. The fractions with similar Rf value were pooled together. Fractions giving single spot in the TLC were regarded as pure. The isolated compound showed positive result for Liebermann-buchard test from which we can conclude that the isolated compound might be triterpenoid. The structure of the isolated compound was determined by IR, 1HNMR, 13CNMR techniques. The spectral analysis of the isolated compound showed following results: IR: It showed the peaks at 3383, 2976, 2814, 1721, 1465, 1123 cm-1 indicated the presence of alcoholic group; 1H NMR (400 MHz, CDCl3): δ 0.66-1.29 (m, 24H, -CH3), δ 1.32-1.38 (m, 4H, H7, H8, H9, H10), δ 1.40-1.51 (m, 4H, H10,H19, H20, H21), δ 1.52-1.59 (m, 3H, H11, H6, H22), δ 1.61-2.38 (m, 2H, H4, H3), δ 3.16-3.20 (m, 6H, H1, H2, H12, H13, H15, H17); 13C NMR (400 MHz, CDCl3): δ 15.99, 16.13, 18.01, 18.33, 19.32, 20.94, 25.16, 27.43, 27.46, 28.00, 29.71, 29.86, 34.30, 35.60, 37.18, 38.07, 38.73, 38.87, 40.02, 40.85, 42.84, 43.01, 47.99, 48.32, 50.45, 55.32, 79.00, 109.34, 109.67 (C=C), 150.96 (C=O). From the above result, the isolated compound was elucidated to be tetracyclic triterpenoid. As triterpenoids are mostly responsible for anti-ulcerogenic activity so the isolated compound was further evaluated for antiulcer activity by pyloric ligation induced gastric ulcer, water immersion stress ulcer and indomethacin induced ulcer models in Wistar albino rats. In the pyloric ligation induced gastric ulcer model, the isolated compound at the dose of 300 mg kg-1 showed significant reduction in gastric volume, free acidity and total acidity i.e., 1.79±0.12, 31.58±0.31 and 72.95±0.11 respectively. The percentage inhibition was found to be maximum at the dose of 300 mg kg-1 in all the three animal models. The percentage inhibition was 56.6, 66.3 and 61.2 in pyloric ligation induced gastric ulcer, water immersion stress ulcer and indomethacin induced ulcer models respectively. All the above gathered results the isolated compound i.e., Cucurbitane-type triterpenoids was found to be potent against gastric lesions and therefore can be used as future natural anti-ulcerogenic agent.

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