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Cheng-Wei Tzeng, Wen-Sheng Tzeng, Liang-Tzung Lin, Chiang-Wen Lee, Ming-Hong Yen, Feng-Lin Yen, and Chun-Ching Lin

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Artocarpus communis Induces Autophagic Instead of Apoptotic Cell Death in Human Hepatocellular Carcinoma Cells

Cheng-Wei Tzeng

Graduate Institute of Natural Products, Kaohsiung Medical University, Kaohsiung, Taiwan

Wen-Sheng Tzeng

Department of Medical Imaging, Chi Mei Medical Center, Tainan, Taiwan

Department of Medical Imaging and Radiological Science, College of Health Sciences, Central Taiwan University of Science and Technology, Taichung, Taiwan

Liang-Tzung Lin

Department of Microbiology and Immunology, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan

Chiang-Wen Lee

Department of Nursing, Division of Basic Medical Sciences and Chronic Diseases and Health Promotion Research Center, Chang Gung Institute of Technology, Chia-Yi, Taiwan

Research Center for Industry of Human Ecology, Chang Gung University of Science and Technology, Taoyuan, Taiwan

Ming-Hong Yen

School of Pharmacy, Kaohsiung Medical University, Kaohsiung, Taiwan

Feng-Lin Yen

Graduate Institute of Natural Products, Kaohsiung Medical University, Kaohsiung, Taiwan

Department of Fragrance and Cosmetic Science, College of Pharmacy, Kaohsiung Medical University, Kaohsiung, Taiwan

Institute of Biomedical Sciences, Sun Yat-Sen University, Kaohsiung, Taiwan

Chun-Ching Lin

Graduate Institute of Natural Products, Kaohsiung Medical University, Kaohsiung, Taiwan

School of Pharmacy, Kaohsiung Medical University, Kaohsiung, Taiwan

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For centuries, natural plant extracts have played an important role in traditional medicine for curing and preventing diseases. Studies have revealed that *Artocarpus communis* possess various bioactivities, such as anti-inflammation, anti-oxidant, and anticancer activities. *A. communis* offers economic value as a source of edible fruit, yields timber, and is widely used in folk medicines. However, little is known about its molecular mechanisms of anticancer activity. Here, we demonstrate the antiproliferative activity of *A. communis* methanol extract (AM) and its dichloromethane fraction (AD) in two human hepatocellular carcinoma (HCC) cell lines, HepG2 and PLC/PRF/5. Colony assay showed the long-term inhibitory effect of both extracts on cell growth. DNA laddering and immunoblotting analyses revealed that both extracts did not induce apoptosis in the hepatoma cell lines. AM and AD-treated cells demonstrated different cell cycle distribution compared to UV-treated cells, which presented apoptotic cell death with high sub-G1 ratio. Instead, acridine orange staining revealed that AM and AD triggered autophagosome accumulation. Immunoblotting showed a significant expression of autophagy-related proteins, which indicated the autophagic cell death (ACD) of hepatoma cell lines. This study therefore demonstrates that *A. communis* AM and its dichloromethane