

عنوان مقاله:

Hemolytic and Cytotoxic Properties of Saponin Purified from *Holothuria leucospilota* Sea Cucumber

محل انتشار:

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نویسندگان:

Mozhgan Soltani - *Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran*

Kazem Parivar - *Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran*

Javad Baharara - *Department of Biology, Mashhad Branch, Islamic Azad University, Mashhad, Iran*

Mohammad Amin Kerachian - *Department of Medical Genetics, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*

Javad Asili - *Department of Pharmacognosy, School of Pharmacy, Biotechnology Research Center, Mashhad University of Medical Sciences, Mashhad, Iran*

خلاصه مقاله:

Background: *Holothuroids* (sea cucumbers) are members of the phylum *echinodermata*, which produce saponins. Saponins exhibit a wide spectrum of pharmacological and biological activities. In this study, we isolated the crude saponins from the body wall of the dominant Iranian species of sea cucumber, *Holothuria leucospilota* (*H. leucospilota*). The purpose of this study was to confirm the presence of saponins in the Persian Gulf *H. leucospilota* and study the hemolytic and cytotoxic activities of these compounds. Methods: The body wall of sea cucumber was dried and powdered and the crude saponins were isolated using various solvents. The crude saponins were further purified by column chromatography using HP-20 resin. The foam test, Thin Layer Chromatography (TLC), hemolytic assay, and Fourier Transform Infrared Spectroscopy (FTIR) confirmed the presence of saponins. Cytotoxicity was analyzed using a 3-(4, 5-dimethylthiazol-2-yl)-2, 5-diphenyltetrazolium bromide (MTT) assay on A549 cells, a human lung cancer cell line. Results: The foam test, hemolytic assay, and TLC supported the presence of saponin compounds in the 80% ethanol fraction of *H. leucospilota*. The infrared (IR) spectrum of the extract showed hydroxyl (-OH), alkyl (C-H), ether (C-O) and ester (-C=O) absorption characteristic of teriterpenoid saponins. The C-O-C absorption indicated glycoside linkages to the sapogenins. The crude saponin extracted from sea cucumber was cytotoxic to A549 cells. Conclusion: The 80% ethanol fraction of saponin isolated from *H. leucospilota* exhibited .hemolytic activity and offers promise as an anti-cancer candidate

کلمات کلیدی:

Cytotoxicity assay, Hemolytic assay, *Holothuria leucospilota*, Saponin, Sea cucumber

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