

عنوان مقاله:

Zerumbone mediates apoptosis and induces secretion of proinflammatory cytokines in breast carcinoma cell culture

محل انتشار:

مجله علوم پایه پزشکی ایران، دوره 24، شماره 11 (سال: 1400)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Barathan Muttiah - *Department of Medical Microbiology, Faculty of Medicine, University of Malaya, Lembah Pantai, Kuala Lumpur 50603, Malaysia*

Kumutha Malar Vellasamy - *Department of Medical Microbiology, Faculty of Medicine, University of Malaya, Lembah Pantai, Kuala Lumpur 50603, Malaysia*

Zaridatul Ibrahim - *Department of Pharmacology, Faculty of Medicine, University of Malaya, Lembah Pantai, Kuala Lumpur 50603, Malaysia*

Vanitha Mariappan - *Center of Toxicology and Health Risk Studies (CORE), Faculty of Health Sciences, National University of Malaysia, Jalan Raja Muda Aziz, Kuala Lumpur 50300, Malaysia*

See Hoong - *Department of Surgery, Faculty of Medicine, University of Malaya, Lembah Pantai, Kuala Lumpur 50603, Malaysia*

Jamuna Vadievlu - *Department of Medical Microbiology, Faculty of Medicine, University of Malaya, Lembah Pantai, Kuala Lumpur 50603, Malaysia*

خلاصه مقاله:

Objective(s): To investigate the potential anti-breast cancer activity of zerumbone in regulating apoptotic mediators and cytokines in comparison with paclitaxel (positive control). **Materials and Methods:** In this study, assays such as viability, apoptosis, reactive oxygen species, cell cycle, DNA fragmentation, and cytokines were carried out on MCF-7 cells after treatment with zerumbone and paclitaxel. **Results:** The results showed that zerumbone demonstrated a higher (18-fold) IC₅₀ value (126.7 µg/ml) than paclitaxel (7.29 µg/ml) in order to suppress proliferation and induce cell death of MCF-7. The cell cycle arrest at the G₀/G₁ phase and excessive intracellular ROS production during the in vitro zerumbone treatment indicated occurrence of apoptotic cell death although nuclear DNA fragmentation was not observed. The flow cytometer analysis of treated cells revealed secretion of proinflammatory cytokines suggesting the potential immunomodulatory activity of zerumbone. **Conclusion:** Although, zerumbone exhibited a higher IC₅₀ value compared with paclitaxel yet its anticancer activity against MCF-7 cells is still parallel to paclitaxel hence zerumbone .has the potential to be an antineoplastic agent in the treatment of breast cancer especially the luminal type A

کلمات کلیدی:

Apoptosis, Breast, Cytokine, Natural, Zerumbone

لینک ثابت مقاله در پایگاه سیویلیکا:

