كلية الصيدلة
College of Pharmacy
QATAR UNIVERSITY جامعة قطر
Member of HEALTH الصحة عضو في

THESIS PRESENTATION: Master of Science in Pharmacy

Ms. Areej Ali Al Hams

Thesis Title: Anticancer Effects of Modified Citrus Pectin and Curcumin in Chitosan Nanoparticles on Colon Cancer

Supervisor:

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Thursday, 28 April, 2022
1:00 pm - 3:00 pm

Via Microsoft Teams

Summary: Treatment of colon cancer has evolved over the past decades due to drug resistance. Thus, alternative approaches are required. Citrus pectin was modified to produce a high degree of esterification (MCP) and used in conjunction with chitosan to encapsulate curcumin (CCM-NP). MCP was envisaged to augment the anti-colon effect of curcumin because high esterification correlates with effective anti-colon cancer properties. Optimization yielded nanoparticles with the smallest size and highest zeta-potential (240.6 ± 0.60 nm and a zeta-potential of 5.83 ± 0.01 mV). The encapsulation efficiency of curcumin was 99.63%. The CCM-NP were spherical, discrete and stable at room temperature. In vitro studies showed that CCM-NPS reduced the viability of colorectal cancer cell lines (HCT-116) by 54.74% ± 0.01% in comparison to free curcumin, which reduced 18.69% ± 0.51% of cancer cells at a period of 48 hours. In conclusion, the study demonstrated that CCM-NP is a promising delivery system for colorectal cancer.