

ABSTRACT Colorectal cancer (CRC) is one of the most prevalent causes of cancer mortality worldwide. Saudi patients are more likely to present CRC at advanced disease stages and at younger ages compared to other populations. The present study evaluated the anti-cancer effects of venoms extracted from indigenous snakes on the growth arrest of colon cancer cells. *Walterinnesia aegyptia* venom showed a significant cell death proportions against LoVo cells only, whereas *Echis coloratus* venom-induced apoptosis in LoVo, HTC-116, and HT-29 colon cancer cells. Also, it suppressed the levels of cyclin D1 and survivin, overexpressed p53 and p21 in HCT-116, HT-29, and LoVo cells. Our results provide evidence that snake venoms induce the growth arrest of colon cancer cells via cell cycle arrest, which promotes the direction toward further investigating the innovative therapeutic strategy using biologically synthesized snake venoms.