

Individual Anteaiox Phenols and Colorectal Cancer

EGCG

“Our study presents evidence on the anti-proliferation and anti-migration effects of EGCG against colorectal cancer SW480, SW620, and LS411N cells by downregulating the expression of STAT3 and suggests that EGCG could be an effective and natural supplement for colon-cancer treatment.”

94. Gastroenterology Report, 2021

Curcumin

“The results of this study revealed that curcumin increased the effectiveness of the treatment plan for colorectal cancer in the patients received with curcumin...Yu He et al. evaluated 126 patients in their study and stated that a dose of 1.08 g of curcumin per day for 10–30 days improved the general health of patients with colorectal cancer through increasing the expression of P53 molecules in tumor cells [45]. In a study conducted by Cruz-correa, it was stated that a dose of 1.44 g of curcumin per day will reduce the number and size of polyps without any significant toxicity.” 95. BMC Cancer, 2020

Kaempferol

“By determining the chemopreventive and chemotherapeutic efficacy of a novel DACT2 demethylating stimulator, we demonstrated that DACT2 epigenetic restoration could successfully slow down and reverse CRC tumorigenesis.” 96. Pharmacological Research, 2017

Formononetin

“In one study, formononetin downregulated the expression of key pro-angiogenic factors, such as vascular endothelial growth factor (VEGF) and matrix metalloproteinases (MMPs), in LoVo human colorectal adenocarcinoma cells and reduced xenografted tumor size and the number of proliferating cells in the tumor tissues with decreased serum VEGF level [109]. MMP-2 and MMP-9 are known to be directly associated with tumor angiogenesis...The significant antitumor properties of formononetin make it a novel candidate for anticancer drug development.” 97. Cancers, 2019

Caffeic Acid

“To the best of our knowledge, this is the first study demonstrating the caffeic acid effectively targets colorectal CSC populations by inhibiting the growth and/or self-renewal capacity of colorectal CSCs through PI3K/Akt signaling in vitro and in vivo.” 98. Frontiers in Cell and Development Biology, 2020

Protocatechuic Acid

“Additionally, antimetastatic potential of PCA in human gastric carcinoma AGS cells was mediated via the inhibition of MMP-2 secretion [21]. Moreover, PCA at 25 μ M showed potent anti-angiogenic activities in in vitro study using HUVECs as it blocked cellular proliferation, migration, invasion and increased ROS generation thus inhibited VEGFR2-dependant Akt/MMP2 and ERK pathways [22]. In human gastric carcinoma AGS cells antimetastatic effect was mediated via the inhibition of MMP-2 secretion.” 99. Biomolecules, 2020

Ferulic Acid

“Findings of the present study indicated a significant therapeutic effect of ferulic acid against colon cancer by inhibiting proliferation and promoting apoptosis.”

100. Journal of King Saud University, 2020

Quercetin

"In this study, we demonstrate that quercetin induces apoptosis in human colon cancer CACO-2 and SW-620 cells through inhibiting NF-κB pathway, as well as down-regulation of B-cell lymphoma 2 and up-regulation of Bax, thus providing basis for clinical application of quercetin in colon cancer cases."

101. Pharmacognosy Magazine, 2015

Resveratrol

"A number of studies have supported the potential effects of resveratrol in CRC treatment. This polyphenol compound represents different properties including antioxidant, anti-inflammatory, apoptosis inducer, and anti-angiogenesis efficacy. Due to these significant effects, resveratrol is suggested as a novel therapeutic agent for cancers." 102. Cell Cancer International, 2019

Ellagic Acid

"In conclusion, this study provided preliminary evidence of the antitumor effects of EA treatment on CRC cells. Microarray profiling demonstrated multiple effects of EA and provided a number of avenues for further research. Based on the results of microarray, further studies are needed to validate the multiple functions of EA and provide evidence to support its application in prevention and therapies for human CRC." 103. International Journal of Oncology, 2017

Cinnamic, Hydroxybenzoic, Gallic, p-Coumaric, 3,4-dihydroxyphenylacetic Acids, CAPE

"In conclusion, this review found that phenolic acids could inhibit colon cancer cell proliferation and induce cancer cell apoptosis in part through oxidant-mediated mechanisms."

104. Journal of Nutrition & Food Sciences, 2016