عنوان مقاله:

An overview of the chemistry and anticancer properties of rosemary extract and its diterpenes

محل انتشار:

Journal of Herbmed Pharmacology, دوره 11, شماره 1 (سال: 1401)

تعداد صفحات اصل مقاله: 10

نویسندگان:

Eric Wei Chiang Chan

Siu Kuin Wong

Hung Tuck Chan

خلاصه مقاله:

Rosemary (Rosmarinus officinalis L.), a culinary herb of the family Lamiaceae, has promising anticancer activity. This overview has updated the current knowledge on the chemistry and anticancer properties of rosemary extract, carnosic acid, carnosol, and rosmanol, focusing on colon and prostate cancer cells since they are the most susceptible. The information was procured from Google, Google Scholar, PubMed, PubMed Central, Science Direct, J-Stage, and PubChem. Phenolic compounds isolated from the aerial parts of R. officinalis are flavonoids, phenolic acids, diterpenes, triterpenes, terpenoids, and phenylpropanoids. Some of the compounds are new to science, to the genus, and to the species. Almost ۳۰ compounds possess anticancer properties. Rosemary extracts contain abietane diterpenes, with carnosic acid, carnosol, and rosmanol being the most common. Their molecular structures are similar to three fused aromatic rings. Carnosic acid has a –COOH group at C۲۰, carnosol has a lactone ring occurs across the B ring, and rosmanol has a –OH group at C۷. Against colon and prostate cancer cells, the rosemary extract and diterpenes inhibited cell viability and induced apoptosis and G۲/M phase cell cycle arrest. The inhibition of cell migration and adhesion has also been reported. The rosemary extract and diterpenes also inhibited colon and prostate cancer xenograft in mice. Rosemary extract is more cytotoxic than the diterpenes due to its polyphenols such as flavonoids and triterpenes. In vitro and in vivo cytotoxic activities involve different molecular targets and signalling pathways. Some prospects and areas for future research are suggested.

کلمات کلیدی: