

Abstract

Relationship between Structure of Phenolics and Anticancer Activity †

Müberra Koşar

Faculty of Pharmacy, Eastern Mediterranean University, Famagusta, North Cyprus via Mersin-10, Turkey; muberrakosar@emu.edu.tr; Tel.: +90-392-6303136

† Presented at the 2nd International Conference on Natural Products for Cancer Prevention and Therapy, Kayseri, Turkey, 8–11 November 2017.

Published: 13 November 2017

Abstract: Cancer is one of the main reasons of death in both men and women, claiming over 6 million people each year worldwide. Chemoprevention in combination with anticancer treatment is therefore important to reduce morbidity and mortality. Phenolic acids, flavonoids and tannins are very famous compounds found in the foods known as antioxidant and anticancer groups. Antioxidant mechanisms are also related with anticancer activity. Therefore antioxidant phenolics show the anticancer activity in different degree. Many phenolic compounds have been investigated for their potential use as cancer chemopreventive agents. Phenolic compounds consist of one or more hydroxyl substitution on the aromatic ring system. Cinnamic acid esters, such as caffeic acid phenethyl and benzyl esters, display selective antiproliferative activity against some types of cancer cells. Flavonoids consist of a large group of polyphenolic compounds having a benzo- γ -pyrone structure and are ubiquitously present in plants. They are synthesized by phenylpropanoid pathway. Flavonoids and polyphenolic tannins affect the different cancer cells and these activities and mechanisms shown in vitro cell culture assays. Both antioxidant and anticancer activities of phenolics are related with their hydroxyl substitutions on the aromatic rings and also double bounds in the structures.

Keywords: phenolic acids; flavonoids; tannins; antioxidant activity; anticancer activity



© 2017 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).