

In silico Analysis of Quercetin and its Analogs on Apoptosis †

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Abstract: Quercetin is a flavonoid compound present in many plants such as onions, tomatoes, apples, green tea, flax seeds, etc. It possesses antioxidant and anti-inflammatory effects, which help control inflammation, kill cancer cells, and prevent heart disease. It generally contains antitumor activity. Wide evidence reveals quercetin's antitumor property to inhibit various cancers like breast, lung, nasopharyngeal, kidney, colorectal, pancreatic, prostate, and ovarian cancer. Quercetin possesses antioxidant and anti-inflammatory effects, which help control inflammation, kill cancer cells, and prevent heart disease. In this study, quercetin will be docked against particular proteins like Apoptotic protein (APAF-1, BAX, BCL-2), Heat shock protein, Cytochrome p450, Actin, Tyrosine-protein kinase hck. The study findings will help us understand the mechanism, the role of quercetin in demonstrating the antitumor, antioxidant properties. This also has psychostimulant behaviors and the ability to suppress lipid peroxidation, platelet aggregation, capillary permeability, and promote biogenesis of the mitochondria. The study's main objective is to understand the quercetin's binding ability with proteins and to know how quercetin is involved in the anti-cancer, antioxidant role.

Keywords: Quercetin; antitumor; antioxidant; apoptotic protein; flavonoid; cancer.

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Conflicts of Interest

The authors declare no conflict of interest.