

Cytoprotection by Neutral Fraction of Tanat Red Wine Against Oxidative Stress-Induced Cell Death

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Abstract

Some of the beneficial effects of the Mediterranean diet on human pathologies have been attributed to red wine polyphenols. It has been postulated that the antioxidant activity of the latter would be also responsible for the cytoprotective capacity of red wine that has been reported in a few papers. Nevertheless, red wine shows a complex composition, and the active fraction is not known yet. In this context, the protective capacity of total lyophilized extracts of red wine and anthocyanin, neutral, or acidic fractions, was explored in PC12 cells in culture after a hydrogen peroxide insult. Although all fractions showed high antioxidant activity, only the neutral fraction was cytoprotective. The analysis of this active fraction showed that it was rich in the aglycons quercetin and myricetin as well as the glycosides of kaempferol, isorhamnetin, epicatechin, and catechin, some of which are known to be cytoprotective. This is the first paper to reveal the active fraction of total wine responsible of its cytoprotection.