Some of the Apigenin Derivatives' Impact on Polyphenol Oxidase Enzyme

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Apigenin (4',5,7-trihydroxyflavone), found in many plants, is a belonging to the class that is the of several naturally-occurring. It is a yellow crystalline solid that has been used to dye wool. Apigenin may contribute to the chemopreventive action of vegetables and fruits. It was recently shown that apigenin induces a process called autophagia (a kind of cellular dormancy) that may well explain its chemopreventive properties, but at the same time it induces resistance against chemotherapy [1].

Polyphenol oxidase (PPO), sometimes referred to as phenol oxidase, catecholase, phenolase, catechol oxidase, or even tyrosinase, is considered to be an o-diphenol [2]. PPO (EC 1.14.18.1), a multifunctional copper containing enzyme, is widely distributed in nature [3]. Chalcones are one of the major classes of natural products with widespread distribution in fruits, vegetables, spices, tea and soy based foodstuff. They have recently received a great deal of attention due to their interesting pharmacological activities [4].

In this study, some apigenin derivatives were synthesized and examined effect on polyphenol oxidase enzyme. Tyrosinase has been purified from banana on an affinity gel comprised of Sepharose 4B-l-tyrosine-p-aminobenzoic acid [5]. For evaluating the tyrosinase inhibitory activity, all the prepared compounds were subjected to tyrosinase inhibition assay with catechol as substrate.

The results of study showed that all of the compounds inhibited the tyrosinase enzyme activity.

KEYWORDS: PPO, tyrosinase, inhibitory, purification, Affinity Chromatograph, apigenin

REFERENCES: