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## Antioxidant and tyrosinase inhibitory activities of $\gamma$ -keto ester derivatives of carvacrol and thymol

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The major components of oregano and thyme essential oils are the isomeric monoterpene phenols, carvacrol and thymol. These phenols have a wide range of biological effects including anticancer, antibacterial, antifungal, anticholinesterase, insecticidal, antioxidant and tyrosinase inhibitory activities. The present study is focused on the DPPH radical scavenging and tyrosinase inhibitory activities of fourteen  $\gamma$ -keto ester derivatives of carvacrol and thymol, prepared in three synthetic steps. The esters showed 20-40% inhibition of the DPPH radical at a concentration of 1 mg/mL, with no distinction between carvacrol and thymol isomers. However, the esters showed 30-100% inhibition of the mushroom tyrosinase at 500  $\mu$ M. The thymol derivatives showed higher tyrosinase activity than the carvacrol derivatives, but within both series of compounds activity was enhanced with an increase in the carbon chain length of the alkyl group.  $IC_{50}$  values will be determined for the tyrosinase assay.

### Biography

Geneive E. Henry completed her PhD at the University of the West Indies Mona, followed by successive postdoctoral appointments at Harvard University and Michigan State University. She is currently Degenstein Professor and Chair of the Chemistry Department at Susquehanna University.

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