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Topic of research - Interaction of Selected Proteins with Potential Phytotherapeutics

Finding

Primarily, the lipase inhibitory activity was calculated as percentage inhibition against thymol, carvacrol, linalool, eugenol and RA concentration ranging from 0.5 mmoles/litre to 3 mmoles/litre. This assay shows that rosmarinic acid markedly inhibited lipase activity ranging from 22.23–71% with IC_{50} of 1.5mmoles/litre.

It was followed by fluorescence spectroscopy that suggested the complex formation of lipase with thymol, carvacrol, linalool, eugenol and RA respectively through static quenching mechanism. It has been noticed that all selected ligands binds to lipase successfully. And the result shows that eugenol binds with lipase causing red shift with lipase from 344 to 358 nm (14 nm). Then CD spectroscopy was done to suggest the conformational changes in lipase on binding with thymol, carvacrol, linalool, eugenol and RA. The value of K_a is $9.6 \times 10^8 \text{ L mol}^{-1}$ and $2.1 \times 10^4 \text{ L mol}^{-1}$ for HSA-thymol and BSA- thymol complex respectively which has greatest affinity of binding among all complexes.

Therefore the investigation on the conformational changes of lysozyme with various natural molecules has also been reported by using various spectroscopic methodologies and docking.