

Inclusion Complexes of β -Cyclodextrin and Selected Phenolic Acid Derivatives

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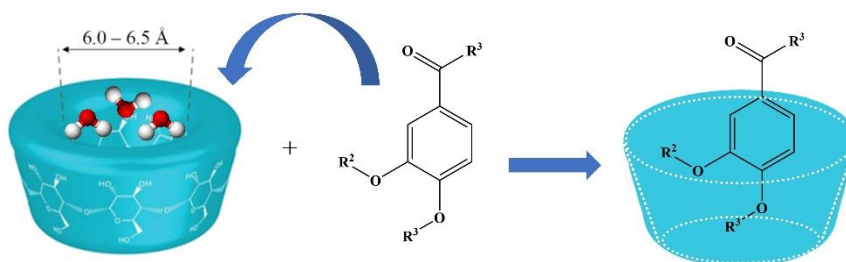
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The key ability of cyclodextrins to form inclusion host-guest complexes found numerous applications in pharmacy, medicine, food, textile, and cosmetic industry, agriculture, nanotechnology, and other fields.¹ Regarding this, in this work, the synthesis of β -cyclodextrin inclusion complexes with protocatechuic and vanillic acid derivatives (esters, hydrazides, and pyrazoles) was performed in aqueous media.



After the reaction completion (24h), the obtained products were isolated by solvent evaporation in a yield of 91–94%. The formation of host-guest complexes was confirmed by ¹H NMR and IR spectra, and elemental analysis, whereas the stoichiometric ratio (1:1) was determined by Job's plot method. Also, inclusion complexes and starting compounds were subjected to antimicrobial investigations which exposed good activity against several bacterial strains.

Keywords: β -cyclodextrin, host-guest complexes, phenolics, antimicrobial activity

References

1. Crini, G. Review: A History of Cyclodextrins. *Chem. Rev.* **2014**, 114(21), 10940-10975. DOI: 10.1021/cr500081p