Complexation of morin with three kinds of cyclodextrin. A thermodynamic and reactivity study

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Properties of inclusion complexes between morin (M) and ?-cyclodextrin (?CD), 2-hydroxypropyl-?-cyclodextrin (HP?CD) and Heptakis (2,6-O-di methyl) ?-cyclodextrin (DM?CD) such as aqueous solubility and the association constants of this complex have been determined. The water solubility of morin was increased by inclusion with cyclodextrins. The phase-solubility diagrams drawn from UV spectral measurements are of the AL-type. Also ORACFL studies were done. An increase in the antioxidant reactivity is observed when morin form inclusion complex with the three cyclodextrin studied. Finally, thermodynamics studies of cyclodextrin complexes indicated that for DM?CD the inclusion is primarily enthalpy-driven process meanwhile ?CD and HP?CD are entropy-driven processes. This is corroborated by the different inclusion geometries obtained by 2D-NMR.