

UNIVERSITI TEKNOLOGI MARA

**THERMODYNAMICS AND SOLUTE SOLVENT
INTERACTIONS DURING SOLUBILITY
ENHANCEMENT OF NAPROXEN UTILIZING
THE COMBINED USE OF COSOLVENT AND
SURFACTANT**

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APPROVAL SHEET

I hereby recommend that the thesis prepared under my supervision by Nurul Nadiah bte Abd Rahim entitle “Thermodynamics and solute solvent interactions during solubility enhancement of the drug naproxen utilizing the combine use of cosolvent and surfactant” accepted in partial fulfilment of the requirements for Degree of Pharmacy from the Faculty of Pharmacy, UITM.

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ABSTRACT

The present study deals with the solubility enhancement of Naproxen by adopting the combined use of surfactant and co-solvent. The solubility studies revealed 436.39 fold enhancements in the solvent system containing 0.8% w/v of sodium dodecyl sulphate and 8% v/v ethanol. The free energy of transfer for the solubilization process has been calculated. The samples of the solubility study were further subjected to conductometric analysis. The conductivity data was further analyzed and the thermodynamic parameters were duly calculated. The enhancement of solubility was correlated with the thermodynamic parameters to elucidate the molecular processes in terms of solute solvent interaction.