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Modulation of solubility and development of a formulation of Plumbagin using hydrotropic solubilization technique

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Abstract--The present work aimed to increase the solubility of poorly water-soluble drug plumbagin using the hydrotropic solubilization technique. Plumbagin is a potent natural product extracted from the plant *Plumbago zeylanica* L. belonging to the family *Plumbaginacea*. It can be used to treat rheumatoid arthritis, dysmenorrhea, injury, and cancer. An oral liquid syrup was prepared using caffeine as a hydrotropic agent. The results showed 97 folds increase in the solubility of the plumbagin when caffeine was used as a hydrotropic agent. Moreover, various evaluation tests like pH, refractive index determination, and drug content of the developed syrup were performed. All the results showed satisfactory outcomes and proved that it is possible to create a stable dosage form using the hydrotropic solubilization technique.

Keywords--Hydrotropic agent, solubilization technique, refractive index, solubility.

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