



# Estimation of Diclofenac diethylamine and Plumbagin in a drug delivery system by simultaneous equation method

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## Abstract

**Objective** The aim of this study was to develop and validate UV-Vis spectrophotometric method for simultaneous estimation of Diclofenac diethylamine and Plumbagin in a combined dosage form.

**Method** Solubility studies were performed to select solvent for UV-Vis spectrophotometric analysis.  $\lambda_{max}$  values were selected on the basis of analysis of overlay spectra. Simultaneous equation for estimation of drugs (Diclofenac diethylamine and Plumbagin) in a combined dosage form was developed using value of absorbance and absorptivity.

**Key findings** Methanol was selected as solvent on the basis of solubility study. Two  $\lambda_{max}$  values, 282nm and 418nm were selected as wavelength of detection. Diclofenac diethylamine and Plumbagin both followed Beer's law over concentration ranges of 5 to 25  $\mu\text{g/ml}$  and 5 to 40  $\mu\text{g/ml}$ , respectively.



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Publisher: Anka Publishers

ISSN: 1303-5150

Subject area: [Physics and Astronomy: Atomic and Molecular Physics, and Optics](#) [Neuroscience: Cognitive Neuroscience](#)  
[Neuroscience: Developmental Neuroscience](#)

Source type: Journal

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