

Modulation of tramadol release from a hydrophobic matrix: implications of formulations and processing variables.

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In the present investigation, hydrogenated cottonseed oil (HCSO) was evaluated as a sustained release matrix for a freely soluble drug, tramadol. Hydrophobic matrix tablets of tramadol, was evaluated by compression of physical mixture of drug and wax, dispersion of drug in HCSO by hot fusion or solubilisation techniques. The method of preparation of tablet had a significant effect on drug release with higher release observed from direct compression matrices and slower release from matrix prepared by dispersion (hot-fused matrices). Influence of addition of hydroxypropylmethyl cellulose, sodium carboxymethyl cellulose, polyethylene glycol 4000 and surfactants like sodium lauryl sulphate and polysorbate 20 to HCSO matrix on drug release was investigated. The added excipients exhibited a propensity to enhance drug release from the HCSO matrix. NaCMC was effective at a lower ratio (