



## Preparation and Evaluation of Self-Microemulsifying Drug Delivery System of Carvedilol

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**SUMMARY.** The objective of the work was to develop, optimize and evaluate self-microemulsifying drug delivery system (SMEDDS) of carvedilol (CDL), a poorly water-soluble drug. SMEDDS was developed to increase the solubility, dissolution rate and ultimately, oral bioavailability of CDL. The solubility of CDL was determined in various oils, surfactants and cosolvents. Pseudoternary phase diagrams were used to identify the region of microemulsification. The SMEDDS were characterized by morphological observation, droplet size and zeta-potential, cloud point, % transmission study and emulsification time. The optimized formulation was composed of Capmul MCM C8 (18 %), Tween 80 (65.6 %), and polyethylene glycol 400 (14.4 %). The SMEDDS formulation showed complete release in 20 min as compared with the plain drug, which showed a limited dissolution rate.

**KEY WORDS:** Carvedilol, Polyethylene glycol 400, Capmul MCM C8

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