

Review Article

Factors Influencing the Design and Performance of Oral Sustained/Controlled Release Dosage Forms

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ABSTRACT: Of all drug delivery systems, oral drug delivery remains the most preferred option for administration for various drugs. Availability of wide variety of polymers and frequent dosing intervals helps the formulation scientist to develop sustained/controlled release products. Oral Sustained release (S.R) / Controlled release (C.R) products provide an advantage over conventional dosage forms by optimizing bio-pharmaceutic, pharmacokinetic and pharmacodynamic properties of drugs in such a way that it reduces dosing frequency to an extent that once daily dose is sufficient for therapeutic management through uniform plasma concentration providing maximum utility of drug with reduction in local and systemic side effects and cure or control condition in shortest possible time by smallest quantity of drug to assure greater patient compliance. This review describes the various factors influencing the design and performance of sustained/controlled release products along with suitable illustrations.

KEYWORDS: Sustained release; Absorption window; Stability; Receptor-occupation; Lipophilicity; Clearance; Apparent volume of distribution; Half-life
