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Editorial

Coating of solid dosage forms

Coating of solid dosage forms is an old pharmaceutical process, which has seen significant advances in both the equipment design and development of coating materials during the past 30 years. The transition from sugar coating in conventional pans to film coating in modern fluidized beds or perforated pans with high drying efficiencies has been mastered by the pharmaceutical industry. Solid dosage forms are coated for a variety of reasons (e.g., improved stability, mechanical resistance and product appearance, taste- or odor-masking, product identification and extended release). This special issue presents coating issues for extended release preparations.

The polymers used for the preparation of extended release dosage forms are predominantly of either acrylic or cellulosic nature. These polymers can be divided into polymers, which are insoluble in gastrointestinal fluids, and in enteric polymers, which dissolve in aqueous media with slightly acidic or neutral pH values. Aqueous film coating has replaced organic film coating and a special emphasis in this issue is on aqueous-based systems.

Important process and formulation parameters for acrylic polymers are reviewed by Petereit and Weisbrod and the release mechanism from ethylcellulose-coated pellets is described by Lippold et al. The release from pellets coated with either an aqueous ethylcellulose dispersion or an organic ethylcellulose solution was compared (Wesseling and Bodmeier).

Stability issues of enterically coated tablets and pellets are discussed (Thoma and Bechtold). Dry powder coating is a novel technology for the coating with a micronized enteric polymer (Obara et al.). This process results in short process times and is basically solvent-free.

Special polymers for site-specific delivery within the intestinal tract, for example, for colonic delivery, are gaining increased interest (Bauer et al.). Ideally, these polymers are impermeable up to the desired site of release, the release is then mostly triggered enzymatically.

Important film properties are the adhesion of the film to the substrate (review by Felton and McGinity) and the tackiness of the coating (Wesseling et al.). Coated multiple-unit dosage forms (e.g., pellets, granules) are replacing single-unit coated dosage forms (e.g., tablets). Problems associated with the compression of coated pellets into rapidly disintegrating tablets are the damage of the coating during compression and a homogeneous distribution of the pellets within the tablets (Schmidt et al.).

Although polymers have a dominant role among coating materials, lipids have an interesting potential for the preparation of extended release dosage forms because of their low melt viscosity. Lipids can be applied without solvents through a hot melt coating technology (Barthelemy et al.).

We are thankful to the authors for their continuous valuable contributions to the area of coating technology and, in particular, to this special theme issue.

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