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Plant Polysaccharides-Based Multiple-Unit Systems for Oral Drug Delivery

 Springer

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About This Book

This volume presents almost all the overviews and recent topics related to various plant polysaccharide-based multiple-unit systems for oral drug delivery applications. The use of plant-derived materials in the drug delivery research is taken seriously into consideration today because of non-toxicity, biodegradability, readily availability, eco-friendly, and low extraction expenditure. Among various plant-derived materials, plant polysaccharides are a class of naturally occurring polymers present as storage carbohydrates in plants consisting of glucose monomers in cereals, root vegetables, rhizomes, seeds, fruits, etc. A substantial research endeavor has currently been directed to explore usefulness of various plant polysaccharides for pharmaceutical uses including drug delivery, and their use is being evolved from their auxiliary functions toward their active role as drug performance enhancers in terms of drug release, drug stability, bioavailability, target specificity, etc. During the past few decades, various plant polysaccharides have already been used to design oral multiple-unit sustained-release oral drug delivery systems like microparticles, beads, spheroids, etc. These multiple-unit systems have shown the capability to mix up with the gastrointestinal juices, to distribute over a wider area in the gastrointestinal tract, lowering both the intra- and inter-subject variability of the drug absorption with the reduction of dose dumping possibility.

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Abbreviations

ABR	Assam Bora rice
DSC	Differential scanning calorimetry
EDX	Electron dispersive X-ray
FM	Fenugreek seed mucilage
FTIR	Fourier transform infrared
GAr	Gum arabic
GIT	Gastrointestinal tract
GRAS	Generally recognized as safe
IPN	Interpenetrated polymer network
LG	Locust bean gum
LP	Linseed polysaccharide
OG	Okra gum
PS	Potato starch
SEM	Scanning electron microscopy
SG	Sterculia gum
TP	Tamarind polysaccharide
TS	Tapioca starch
XRD	X-ray diffraction