

**Frontiers in Pharmaceutical, Material, and
Environmental Sciences: Innovative Approaches
and Applications**

Editors

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PREFACE

This book brings together a collection of research studies that delve into the fields of pharmaceutical science, materials science, and environmental science. The chapters within this volume highlight innovative methods and significant discoveries in these areas. The research presented here explores the development of advanced drug delivery systems, the therapeutic potential of natural products, the removal of environmental pollutants, and the optimization of material properties. By combining experimental techniques with computational modeling, the authors have gained deeper insights into the underlying mechanisms of these processes. We hope this book will serve as a valuable resource for researchers, academics, and industry professionals in these fields. The knowledge and insights provided here will contribute to the advancement of scientific research and the development of sustainable solutions for global challenges.

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Chapter – 1

Formulation and Evaluation of Telmisartan Sustained-Release Tablets

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Abstract

The study concentrates on developing and accessing extended-release floating tablets that include Telmisartan, a medication typically prescribed for treating hypertension. Different polymer ratios were utilized in creating various formulations through direct compression methods to regulate the release of the drug. Quality assurance measures encompassed testing pre-compression and post-compression parameters such as hardness, friability, and drug content. One of the formulations, F5, stood out for its optimal drug release, reaching an impressive 97% over 20 hours. The stability studies performed on F5 revealed no notable alterations within three months under ICH conditions, thus verifying the formulation's strength. The results suggest that the improved formulation can improve patient adherence and maximize drug absorption, offering promising advantages in the effective treatment of hypertension through prolonged medication effectiveness.

Keywords: Telmisartan, hypertension, hardness, friability, medication

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