# Exploring Complementary and Alternative Medicinal Products in Disease Therapy

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A volume in the Advances in Medical Diagnosis, Treatment, and Care (AMDTC) Book Series



Downloaded: 12/24/2023 8:37:34 AM IP Address: 169.149.199.2

Published in the United States of America by

IGI Global

Medical Information Science Reference (an imprint of IGI Global)

701 E. Chocolate Avenue Hershey PA, USA 17033

Tel: 717-533-8845 Fax: 717-533-8661

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### Library of Congress Cataloging-in-Publication Data

Names: Eshiet, Etetor Roland, 1967- editor.

Title: Exploring complementary and alternative medicinal products in disease

therapy / Etetor Roland Eshiet, editor.

Description: Hershey, PA: Medical Information Science Reference, [2023] | Includes bibliographical references and index. | Summary: "This book explores the use of complementary and alternative medicinal products in disease therapy"-- Provided by publisher.

Identifiers: LCCN 2020011229 (print) | LCCN 2020011230 (ebook) | ISBN 9781799841203 (hardcover) | ISBN 9781799841210 (ebook)

Subjects: MESH: Complementary Therapies

Classification: LCC R733 (print) | LCC R733 (ebook) | NLM WB 890 | DDC

615.5--dc23

LC record available at https://lccn.loc.gov/2020011229 LC ebook record available at https://lccn.loc.gov/2020011230

This book is published in the IGI Global book series Advances in Medical Diagnosis, Treatment, and Care (AMDTC) (ISSN: 2475-6628; eISSN: 2475-6636)

British Cataloguing in Publication Data

A Cataloguing in Publication record for this book is available from the British Library.

All work contributed to this book is new, previously-unpublished material.

The views expressed in this book are those of the authors, but not necessarily of the publisher.

For electronic access to this publication, please contact: eresources@igi-global.com.

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# Chapter 8 Probiotics, Gut Microbiota, and Epigenomics: A Review of Pre-Clinical and Clinical Investigations

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## **ABSTRACT**

Probiotics therapy has emerged as a popular, potential alternative therapy utilized in combating disorders associated with mammalian gut and visceral organs. Ongoing research suggests that probiotics directly or indirectly modulate host epigenomic signatures that in turn affect the host functional outcome. Data obtained from experimental studies indicate that microbiota, diet, and pharmaceuticals affect host epigenetic machinery subsequently resulting in specific physiological responses. Thus, molecular designing of epigenetic-based therapeutic agents may provide a valid pathway to rectifying aberrant changes and managing disease risk and progression. Recent investigations show that probiotic intervention mitigates uncharacteristic epigenetic changes that are associated with many health complications. However, stakeholders need to recognize that probiotic research is an emerging field; therefore, this science must undergo extensive mechanistic investigation. This chapter highlights the potential probiotic mediated host epigenomic interventions in disease therapy and management.

DOI: 10.4018/978-1-7998-4120-3.ch008