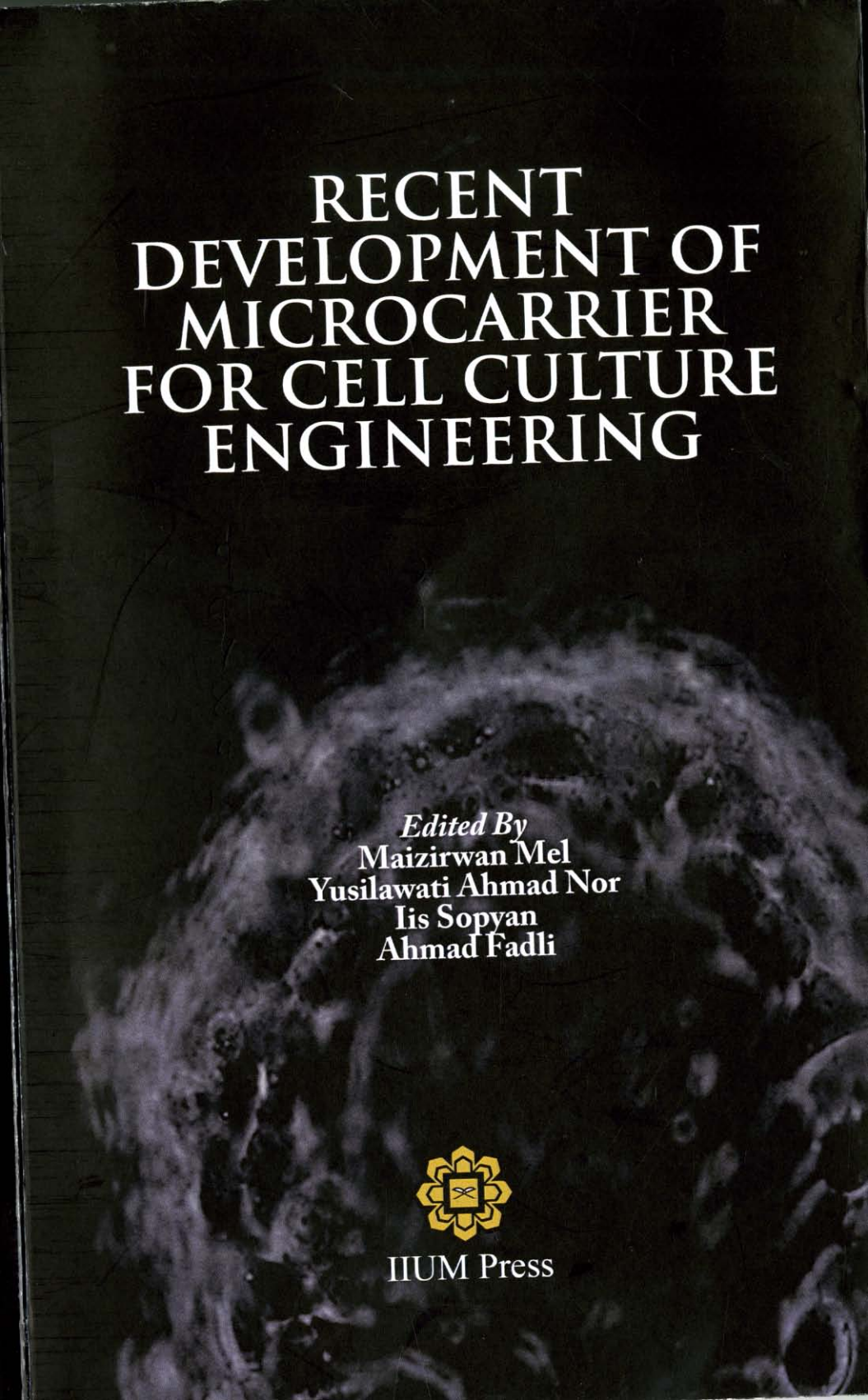
RECENT DEVELOPMENT OF MICROCARRIER FOR CELL CULTURE ENGINEERING



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Contents

Chapter 10

The Growth Culture of BRIN-BD11Producing Insulin in Different Type of Microcarriers

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1. Introduction

The BRIN-BD11 cell line is a clonal glucose-responsive insulin-secreting cell line which is responsive to a range of pharmacological modulators of insulin secretion (Ball et al. 2000). In a recent study, it was demonstrated that BRIN-BD11 cells display insulin secretory responses to a wide range of secretogogues, including glucose, amino acids, hormones, neurotransmitters, sulfonylureas, and other insulinotropic drugs (Brennan et al. 2002).

During the past 20 years considerable effort has been devoted to the production of transplantable and inheritable insulinomas and insulin-secreting cell lines by means of study on rat pancreatic islets which has been helpful in learning the mechanisms involved in human islet transplantation. Generally, most of these studies are initiated by the motivation of generating large quantities of functional beta cells for basic studies on the mechanisms of insulin secretion (Clenaghan and Flatt 1999). The main problem encountered while scaling up the bulk production of functional pancreatic islet cell line is attributed by its anchorage-dependent property where it grows