

RECENT DEVELOPMENT OF MICROCARRIER FOR CELL CULTURE ENGINEERING

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IIUM Press

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011
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Perpustakaan Negara Malaysia Cataloguing-in-Publication Data

Recent Development Of Microcarrier For Cell Culture Engineering
Maizirwan Mel
Include Index

ISBN 978-967-418-009-6

Member of Majlis Penerbitan Ilmiah Malaysia - MAPIM
(Malaysian Scholarly Publishing Council)

Printed by:
IIUM PRINTING SDN. BHD.
No. 1, Jalan Industri Batu Caves 1/3,
Taman Perindustrian Batu Caves,
Batu Caves Centre Point,
68100 Batu Caves,
Selangor Darul Ehsan

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Chapter 10

The Growth Culture of BRIN-BD11 Producing Insulin in Different Type of Microcarriers

Maizirwan Mel, Mohamed Ismail Abdul Karim, Siti Aisyah Mohd

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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 secretagogues, 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