

# PREPARATION, CHARACTERIZATION AND APPLICATION OF PERMEABILIZED YEAST CELLS FOR BIOCATALYSIS

A Thesis  
Submitted to the UNIVERSITY OF MYSORE

FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY  
In  
BIOCHEMISTRY

By  
N. S. NAINA, M.Sc.,



DEPARTMENT OF BIOCHEMISTRY AND NUTRITION  
CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE  
MYSORE - 570 013, INDIA  
DECEMBER 1993

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*Dedicated to  
my dear father*

## DECLARATION

I declare that the thesis entitled **'PREPARATION, CHARACTERIZATION AND APPLICATION OF PERMEABILIZED YEAST CELLS FOR BIOCATALYSIS'** submitted to the University of Mysore for the award of the Degree of **DOCTOR OF PHILOSOPHY** is the result of research work carried out by me under the guidance of Dr. S.G. Bhat, Department of Biochemistry and Nutrition, Central Food Technological Research Institute, Mysore-570 013, during the period 1988-1993. I further declare that the results have not been submitted for the award of any other Degree or Fellowship.

Mysore

December 7, 1993

*N.S. Naina*

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### CERTIFICATE

This is to certify that the thesis entitled "**PREPARATION, CHARACTERIZATION AND APPLICATION OF PERMEABILIZED YEAST CELLS FOR BIOCATALYSIS**" submitted by Ms. N.S.Naina for the Degree of **DOCTOR OF PHILOSOPHY** to the University of Mysore is the result of research work carried out by her in the Department of Biochemistry and Nutrition under my guidance during the period 1988-1993.

  
S.G.BHAT

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**N.S. NAINA**

## LIST OF ABBREVIATIONS

CTAB	Cetyltrimethylammonium bromide
EDTA	Ethylenediaminetetraacetic acid
SDS	Sodium dodecyl sulfate
PEG	Polyethylene glycol
TLC	Thin layer chromatography
HPLC	High performance liquid chromatography
GC	Gas chromatography
NMR	Nuclear magnetic resonance
ADH	Alcohol dehydrogenase
HK	Hexokinase
G6PDH	Glucose-6-phosphate dehydrogenase
ATP	Adenosine triphosphate
NAD <sup>+</sup>	Nicotinamide adenine dinucleotide
NADP <sup>+</sup>	Nicotinamide adenine dinucleotide phosphate
O.D.	Optical density
ml	Millilitre
μl	Microlitre
M	Molar
mM	Millimolar
μM	Micromolar
g	Gram(s)
mg	Milligram(s)
μg	Microgram
min	Minute(s)
h	Hour(s)
wt.	Weight
rpm	Rotations per minute
cm	Centimetre
mm	Millimetre
°C	Degree centigrade
Fig.	Figure

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