

LIST OF ABBREVIATIONS

°C	Degree Celsius
µg	Microgram
µl	Microlitre
µm	Micrometer
µmol	Micromole
A	Absorbance
ADP	Adenosine 5'-diphosphate
ANOVA	Analysis of variance
APS	Ammonium per sulphate
ATP	Adenosine 5'-triphosphate
BLAST	Basic Local Alignment Search Tool
BMGY	Buffered glycerol-complex
BMMY	Buffered methanol-complex
BPP	β-propeller phytases
BSA	Bovine Serum Albumin
CAMERA	Correlation Adjusted MEan RAnk
CCRD	central composite rotatable design
cm	Centimeter
CM-cellulose	Carboxymethyl cellulose
CP	Cystein phytases
CV	coefficient of variation

DDBJ	DNA Data Bank of Japan
DEAE	Diethylaminoethyl
DNA	Deoxyribonucleic acid
dNTP	Deoxynucleotide triphosphate
dSPP	Disodium pyrophosphate
EDTA	Ethylene diamine tetraacetic acid
EMBL	European Molecular Biology Laboratory
F6P	Fructose 6-phosphate
g	Gram
G6P	Glucose 6-phosphate
h	Hour
HAP	Histidine acid phosphatases
HAPhy	Histidine Acid Phytase
IAA	Indole acetic acid
IP	Inositol phosphate
IP6/ InsP6	Inositol (1,2,3,4,5,6) hexakisphosphate
IPTG	Isopropyl thio- β - galactoside
kDa	Kilo Dalton
kg	Kilogram
K_m	Michaelis constant
l	Litre
LB	Luria Bertini
MEGA	Molecular Evolutionary Genetics Analysis
min	Minute

MINPP	Multiple inositol polyphosphate phosphatase
ml	Mililitre
MM	Minimal methanol
μ M	Micromolar
mM	Milimolar
N	Nitrogen
NA	Nutrient agar
NB	Nutrient broth
NCBI	National Center for Biotechnology Information
ng	Nanogram
nm	Nanometer
OD	Optical density
OFAT	one factor at a time
ORF	Open reading frame
P	Phosphorus
PA	Phytic acid
PAP	Purple acid phosphatase
PB	Plackett-Burman
PCR	Polymerase chain reaction
Pi	Inorganic phosphate
pNPP	para- nitrophenylphosphate
PPM	Phytase production medium
PSM	Phytase screening medium
PTP	Protein tyrosine phosphatase

PVDF	Polyvinylidene difluoride
R	Correlation coefficient
RDB	Regeneration dextrose base
RNA	Ribonucleic acid
rpm	Rotation per minute
RSM	Response Surface Methodology
SD	Standard deviation
SDS	Sodium dodecyl sulfate
SDS-PAGE	Sodium dodecyl sulphate- polyacrylamide gel electrophoresis
SE	Standard error
SmF	submerged fermentation
SOC	Super Optimal broth with Catabolite repression
TAE	Tris-acetate EDTA
TCA	Tricarboxylic acid
TE	Tris EDTA
TEMED	Tetramethylethylenediamide
™	Trade Mark sign
TIGR	The Institute for Genomic Research
U	Unit
UV	Ultraviolet
v/v	Volume/ volume
w/v	Weight/ volume
WBM	Wheat bran medium
X-gal	5-bromo-4-chloro-indolyl- β -D-galactopyranoside

YPD	Yeast extract- peptone- dextrose
α	Alpha
β	Beta
β -ME	Beta-mercaptoethanol
γ	Gamma

Appendix B

THESIS RELATED PUBLICATIONS/ ABSTRACTS/ PROCEEDINGS

(A) Publications

1. **Moushree Pal Roy**, Madhumita Poddar, Kamal Krishna Singh and Shilpi Ghosh (2012). Purification, characterization and properties of phytase from *Shigella* sp. CD2. Indian Journal of Biochemistry and Biophysics 49: 266-271.
2. **Moushree Pal Roy**, Deepika Mazumdar, Subhabrata Dutta, Shyama Prasad Saha, Shilpi Ghosh. Cloning and expression of phytase appA gene from *Shigella* sp. CD2 in *Pichia pastoris* and comparison of properties with recombinant enzyme expressed in *E.coli*. (Communicated, In review)
3. **Moushree Pal Roy**, Subhabrata Datta, Shilpi Ghosh. Isolation, characterization and gene cloning of a novel extracellular low-temperature -active phytase from *Bacillus* sp. RS1 and its contribution to growth of chick pea (*Cicer arietinum*). (Communicated)

(B) Abstracts/ Proceedings

Moushree Pal Roy and Shilpi Ghosh (2014). Purification and characterization of phytases from two enteric bacteria isolated from cow dung. Proceedings of 5th International Conference on Environmental aspects of Bangladesh (ICEAB), held on 5-6 September, 2014, organized by CNSER and University of Dhaka, Bangladesh. Paper ID E38. pp. 57-59. (Oral)

Moushree Pal Roy, Madhumita Poddar and Shilpi Ghosh (2012). Isolation and characterization of phytase from enteric bacteria. In abstracts volume of National Seminar on “Biotechnology for people: Application and Awareness”, held on 4-5 December, organized by Department of Botany, Prasanna Deb Women’s College, Jalpaiguri, West Bengal, India. (Oral)

Madhumita Poddar, **Moushree Pal Roy** and Shilpi Ghosh (2012). Production of phytase from *Bacillus* sp. 11E using agro-wastes as substrate: An attempt to develop a commercial phytase production system. In abstracts volume of National Seminar on

“Microtrends 2012”, UGC sponsored seminar on Emerging Trends in Microbiology, held on 16 March, 2012, organized by Department of Microbiology, University of North Bengal, Siliguri, India. (Poster)

Moushree Pal Roy, Madhumita Poddar, Kamal Krishna Singh, Abhinav Singh and Shilpi Ghosh (2011). Studies on phytase isolated from enteric bacteria: An attempt to develop phytase for feed application. In abstracts volume of International Seminar on “World Congress on Biotechnology”, held on 21-23 March, 2011, organized by OMICS Publishing Group and Journal of Microbial and Biochemical Technology, in Hyderabad, India. (Poster)