BIOCHEMISTRY AND PLANT METABOLISM

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Kripa Drishti Publications, Pune.

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AND
PLANT METABOLISM

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PREFACE

This book **Biochemistry and Plant Metabolism** begins with a chapter on metabolism and how metabolic processes are compartmentalized in plants to generate diverse metabolites. It then discusses bioenergetics, plant cell structure, major bimolecular followed by major primary metabolic processes like photosynthesis, respiration, carbohydrates, nitrogen, lipid and nucleic acid metabolism with reference to higher plants, secondary metabolites and the transporters involved in their Secondary metabolites such as alkaloids, phenolics, terpenoids, cyanogenic glucosides, and non-protein amino acids are discussed in detail, as well as their biosynthesis. Secondary metabolite production in vitro introduces various in vitro methods such as suspension culture, hairy root culture, biotransformation, and the use of bioreactors for large-scale metabolite production. The book also gives an overview of the various compounds involved in plant growth and development. The final chapter describes the various techniques used in phytochemical research.

Biochemistry and Plant Metabolism has been hailed as a significant contribution to the plant sciences literature, with critical acclaim matching global sales success. The second edition will maintain the scope and focus of the first edition while providing a major update, including much new material and reorganizing some chapters to improve the presentation.

It is divided into four parts covering:

- Amino Acids and Protein metabolism
- Enzymology
- Nitrogen, Phosphorous & Sulphur Metabolism
- Carbohydrate and Lipid Metabolism (15 periods)

Biochemistry and Plant Metabolism is unique in the plant sciences literature because it is the only comprehensive, authoritative, and integrated single volume book in this critical field of study.

This book is an excellent resource for both graduates and researchers interested in learning the fundamentals of plant metabolism.

Abbreviations

Acylglycerophosphate Acyltransferase (AGPAT)

Adenosine Diphosphate [ADP]

Adenosine Triphosphate (ATP)

Adenosine-5'-Phosphate (APS)

Alanine Transaminase (Alt)

Alcohol-Insoluble Residues (AIR)

Aminoacyl (A)

Apiogalacturonan (AGA)

Arabinogalactan I (AGI)

Aspartate Transaminase (Ast)

Atomic Force Microscopy (AFM)

Bile Salt-Stimulated Lipase (BSSL)

Caloric Restriction (CR)

Cannabichromevarinic Acid (CBCVA)

Cannabidivarinic Acid (CBDVA)

Cannabigerovarinic Acid (CBGVA)

Carbohydrate Response Element Binding Protein (ChREBP)

Cation Exchange Complex (CEC)

Chelator-Soluble Pectin (CSP)

Cholesteryl Ester Hydrolase (CEH)

Chylomicrons (CM)

Damage-Associated Molecular Patterns (DAMPs)

Degree of Methylation (DM)

Deoxyribonucleic Acid (DNA)

Diammonium Phosphate (DAP)

Diluted Alkali-Soluble Pectin (DASP)

Dipeptidase (DP)

Dissolved Oxygen (DO)

Enzyme-Inhibitor (EI)

Enzyme-Substrate (ES)

Eukaryotic Initiation Factor-2 (eIF-2)

Exit (E)

Flavin Adenine Dinucleotide (FAD)

Flavin Adenine Dinucleotide (FAD)

Free Fatty Acids (FFA)

Geranyl Diphosphate (GPP)

Glucose 1-Phosphate (Glc1P)

Glutamate Cysteine Ligase (GCL)

Glutamic Oxalacetic Transaminase (GOT)

Glutamic Pyruvic Transaminase (GPT)

Glutamine Synthetase (GS)

Glutamyl Transferase (GT)

Glutathione Peroxidases (Gpxs)

Glutathione Reductase (GR)

Glutathione Synthase (GS)

Glutathione-S-Transferases (GSTs)

Glycerol-3-Phosphate Acyltransferase (GPAT)

High Density Lipoprotein (HDL)

High-Methoxy (HM)

Homogalacturonan (HG)

Hydrogen Ion (H^+)

Hydroxyl (OH^-)

Leghemoglobin (Lb).

Linear Noise Approximation (LNA)

Lipid Hydroperoxides (LOOH)

Low Density Lipoprotein (LDL)

Low-Methoxy (LM)

Molybdopterin Guanine Dinucleotide (MGD)

Monoammonium Phospahte (MAP)

Nicotinamide Adenine Dinucleotide (NAD)

Nicotinamide Adenine Dinucleotide Phosphate (NADP)

Olivetolic Acid (OLA)

Pancreatic Lipase-Related Protein 1 (PLRP1)

Pancreatic Phospholipase A2 (PLA2)

Pancreatic Triglyceride Lipase (PTL)

Pentose Phosphate Pathway (PPP)

Peptidyl (P)

Phosphorus (P)

Positron Emitting Tracer Imaging System (PETIS)

Pre-Side-Dress Nitrogen Soil Test (PSNT)

Proton Motive Force (PMF)

Rhamnogalacturonan I (RGI)

Rhamnogalacturonan II (RGII)

Ribonucleic Acid (RNA)

Secondary Metabolites (SMs)

Sterol Regulatory Element Binding Protein (SREBP1a and SREBP1c)

Stochastic Simulation Algorithm (SSA)

Urea-Ammonium Nitrate (UAN)

Uridine Diphosphate (UDP)

Very Low Density Lipoprotein (VLDL)

Water-Soluble Pectin (WSP)

Xylogalacturonan (XGA)

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