

## *Mediterranean Agronomic Institute of Chania*

### *B. Centre of Applied Agrobiological and Food Sciences*

#### *B4. Natural Products and Biotechnology*

##### *Objectives*

- To provide knowledge on the living systems producing secondary metabolites and their characteristic features.
- To introduce the current advances in the biosynthesis, characterization, and isolation of plant and microbial natural products.
- To provide extensive laboratory training in the genetic, computational and biochemical tools utilized in Natural Products Biotechnology.
- To enable a thorough scientific evaluation of the current and potential uses of natural products by the industry and the pharmaceutical sector.

##### *1. Training sequence*

###### *Section 1 - Introductory Discipline [11/10/2004-05/11/2004]*

Unit 1 – Scientific English (3 ECTS)

Miss L. Lucas,  
MAICh, Greece

Unit 2 – Introductory Computing (3 ECTS)

N. Boretos,  
MAICh, Greece

Unit 3 – Statistical Procedures (3 ECTS)

Dr. A. Kanas,  
University of Crete, Rethymnon,  
Greece

###### *Section 2 - Introduction to Advanced Biology [08/11/2004-28/01/2005]*

Unit 1 – Cell Biology (1.5 ECTS)

Dr. K. Vlachonassios,  
Aristotle University of Thessaloniki,  
Thessaloniki, Greece

Unit 2 – Biochemistry (3 ECTS)

Dr. K. Sekeris,  
National Research Institute, Athens,  
Greece

Unit 3 – Stress Physiology (3 ECTS)

Dr. T. Avada,  
University of Nebraska, USA

Unit 4 – Genetics (3 ECTS)

Prof. A. Tsaftaris,  
Aristotle University of Thessaloniki,  
Thessaloniki, Greece

Unit 5 – Molecular Biology (3 ECTS)

Dr. D. Kafetzopoulos,  
Institute of Molecular Biology and  
Biotechnology, Heraklion, Greece

Unit 6 – Molecular Biology Techniques (3 ECTS)

Dr. A. Makris,  
MAICh, Greece

Unit 7 – Tissue Culture Technology (3 ECTS)

Unit 8 – Advanced Topics in Plant Cytology (3 ECTS)

Prof. A. Bozabalidis,  
Aristotle University of Thessaloniki,  
Thessaloniki, Greece

***Section 3 - Chemistry of Natural Products [31/01/2005-25/03/2005]***

Unit 1 – Topics in Organic Chemistry (3 ECTS)

Dr. E. Couladouros,  
Agricultural University of Athens,  
Athens, Greece

Unit 2 – Biochemistry of Secondary Metabolism (3 ECTS)

Dr. J. Degenhardt,  
Max Planck Institute for Chemical  
Ecology, Jena, Germany

Unit 3 – Chemistry of Terpenoids and Essential Oils (3 ECTS)

Ass. Prof. V. Roussis,  
University of Athens, Athens, Greece

Unit 4 – Chemistry of Alkaloids, Flavonoids and Other Phenolics (3 ECTS)

Ass. Prof. E. Kokkalou,  
Aristotle University of Thessaloniki,  
Thessaloniki, Greece

Unit 5 – Laboratory Techniques I (3 ECTS)

Dr. A. Detsi,  
Institute of Organic and Pharmaceutical  
Chemistry, Athens, Greece

Unit 6 – Laboratory Techniques II (3 ECTS).

Dr. D. Makris,  
National Agriculture Research  
Foundation, Athens, Greece

***Section 4 - Biotechnology of Natural Products [28/03/2005-27/05/2005]***

Unit 1 – Enzyme Structure and Function (3 ECTS)

Dr. S. Kampranis,  
MAICh, Greece

Unit 2 – Techniques in Biochemical Analysis (3 ECTS)

Dr. S. Kampranis,  
MAICh, Greece

Unit 3 – Industrial Biotechnology (3 ECTS)

Prof. D. Kyriakidis,  
Aristotle University of Thessaloniki,  
Thessaloniki, Greece

Unit 4 – Bioinformatics & Applications in Secondary Metabolism (3 ECTS)

Dr. P. Kanellopoulos,  
Laikon Hospital, Biochemistry  
Laboratory, Athens, Greece

Unit 5 – Ecological and Stress Biochemistry (3 ECTS)

Dr. Ch. Johnson,  
MAICh, Greece

***Section 5 - Genomics & Proteomics of Natural Products [30/05/2005-01/07/2005]***

Unit 1 – Genomics & Proteomics of Natural Products (3 ECTS)

Unit 2 – Genomics & Proteomics of Natural Products (3 ECTS)