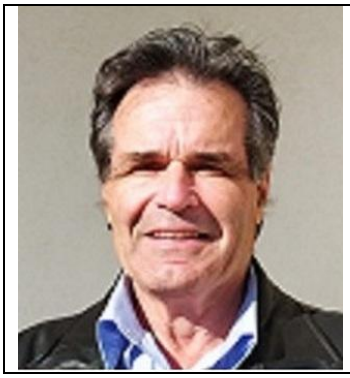
Yannis Gounaris, curriculum vitae



Yannis Gounaris
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Birthday: 18 October 1955, in Alistrati, Serres, Greece.

Education and appointments

period	Institution	Degree/Position	Research/teaching
2020-Present	Dept of Agricultural Biotechnology, International Hellenic University	Professor of Molecular Biology/ Department Head	**Teaching:** 1. Molecular Biology, 2. Genetics, 3. Bioinformatics, 4. Biotechnology 5. Databases **Research Interests** Epigenetics, Evolution, Natural Products, biomass utilization
1996-2020	Dept. of Agriculture, Univ. of Thessaly, Greece	Professor of Molecular Biology	**Teaching:** 6. Plant Molecular Biology, 7. Biochemistry, 8. General and Cellular Biology, 9. Biotechnology **Research Interests** 1. Epigenetics, Evolution, 2. Natural Products
1994-1996	Dept. of Agriculture, Univ. of Thessaly, Greece	Associate Professor of Molecular Biology	**Teaching:** 1. Plant Molecular Biology, 2. Biochemistry, 3. Biotechnology **Research Interests** 1. Transgenics 2. Natural Products
1991-1993	Potato Research Lab, USDA, North Dakota, USA	Research Associate	Molecular biology of cold-induced sugar accumulation in potatoes
1988-1990	Regional Pasture	Research	Molecular biology of apomixis in

	Lab, USDA. Pennsylvania, USA	Associate	grasses.
1985-1987	Waksman Inst. of Microbiology., Rutgers Univ., New Jersey, USA	Research Associate	1. Genes involved in chromoplast development. 2. Mapping of chloroplast DNA.
1981-1984	Dept. of Plant Sciences, Univ. of Lancaster, U.K.	PhD in Plant Biochemistry	Biochemistry of plastid development.
1973-1978	Univ. Of Thessaloniki,Greece	B.S. in Biology	Biology

Teaching: Molecular Biology-Biotechnology, Biochemistry-Primary and Secondary Metabolism, Cellular and General Biology, Genetics-quatitative genetics, Bioinformatics, Informatics applications.

Research interests: Epigenetics-Evolution, Plant Biotechnology Applications, Biotechnology for Natural Products.

Peer-reviewed publications:

1. **Gounaris I**., Wellburn A.R.(1983). Formation of chlorophyll-carotenoid-protein complexes in cereal plastids during greening and normal light-grown development. Biochem. Physiol. Pflanzen. 178:433-442.

2. Wellburn A.R., **Gounaris I**., Fassler L., Lichtenthaler H.K. (1983). Changes in plastid ultrastructure and fluctuations of cellular isoprenoid and carbohydrate compounds during continued etiolation of dark-grown oat seedlings. Physiol. Plant. 59: 347-354.

3. Wellburn F.A.M., **Gounaris I**., Wellburn A.R. (1984). Carbohydrate reserves and plant growth substance sensitivity in plastids, stomata and statocytes during shoot development. Israel J. Bot. 33: 237-252.

4. **Gounaris I**., Michalowski C.B., Bohner H.J., Price C.A. (1986). Restriction and gene mapping of chloroplast DNA from *Capsicum annuum.* Current Genet. 11:7-16.

5. **Gounaris I**., Price C.A. (1987). Plastid transcripts in chloroplasts and chromoplasts of *Capsicum annuum.* Current Genet. 12:219-224.

6. Hadjeb N.K., **Gounaris I**., Price C.A. (1988). Chromoplast-specific proteins in *Capsicum annuum.* Plant Physiol. 88:42-45.

7. **Gounaris I**., Gustine D.L., Sherwood R.T. (1990). Multiple embryo sac formation in a sexual genotype of *Cenchrus ciliaris* treated with ammonium sulphate. Crop Sci. 30: 1350-1353.

8. Lim H., **Gounaris I.,** Hardison R.C., Boyer C.D. (1990). Restriction site and genetic map of *Cucurbita pepo* chloroplast DNA. Current Genet. 18: 273-275.

9. **Gounaris I**., Sherwood R.T., Gustine D.L. (1991). Stamen-specific proteins of buffelgrass (*Cenchrus ciliaris*). J. Plant Physiol. 137: 437-440.

10. Gounaris E.K., Sherwood R.T, **Gounaris I**., Hamilton R.H., Gustine D.L. (1991). Inorganic salts modify embryo sac development in sexual and aposporous buffelgrass. Sex Plant Reprod. 4:188-192.

11. **Gounaris Y**., Sowokinos J.R. (1992). Two-dimensional analysis of mitochondrial proteins from potato cultivars resistant and sensitive to cold-induced sweetening. J. Plant Physiol. 140: 611-616.

12. **Gounaris Y**. (1993). Comparison of restriction patterns of mitochondrial DNA from low and high sugar accumulating cultivars/selections. J. Plant Physiol. 141: 423-427.

13. **Gounaris Y**. (1996). Localization of the gene coding for a 26-kDa mitochondrial protein detected in low temperature-stored potato tubers. J. Plant Physiol. 147: 755-758.

14. Gustine D.L., Sherwood R.T., **Gounaris Y**., Huff D. (1996). Isozyme, protein, and RAPD markers within a half-sib family of buffelgrass segregating for apospory. Crop Sci. 36: 723-727.

15. **Gounaris Y**. (2001). A qualitative model for the mechanism of sugar accumulation in cold stressed plant tissues. Theory Biosc. 120:149-165.

16. **Gounaris Y**., Skoula. M., Furnaraki C., Drakakaki G., Makris A. (2002). Comparison of essential oils and genetic relatioship of origanum X intercedens to its parental taxa in the island of Crete. Biochem. System. Ecol. Biochem. Syst. Ecol. 30: 249-258.

17. **Gounaris Y.** (2003). Low temperature-induced changes in the relative amounts of ribosomal RNAs in potato mitochondria. J. Food Agri Environ. 1 (2): 138-140.

18. **Gounaris Y.** (2005). Assymetric potato cybrids derived from protoplast fusion between the selection ND860-2 and the cultivar Russet Burbank. J. Food Agri Environ. 3 (1): 157-160.

19. **Gounaris Y,** Berthon J-Y, Litinas C, Leontidiadis L, Tsiropoulos N. (2005). Spectroscopic examination of rose callus methanol-extractable lignin to lignin extracted from differentiated rose tissue by alkaline treatment. J. Food Agri Environ. 3: 161-168.

20. **Gounaris Y,** Galanopoulou S, Galanopoulos N, Ladopoulos A, Michailidis Z, Theophilou S. (2005). Pollen-mediated genetic transformation of cotton with the *Arabidopsis thaliana hmgr* cDNA using the particle gun. J. Food Agri Environ. 3 (2): 157-160.

21. Margaritopoulos J.T, Dovas C.I., **Gounaris J**. Skouras P.J., Kanavaki O.M., Katis I.N.I, Tsitsipis J.A. (2010). Molecular analysis of the coat protein of *Potato virus Y* isolates in Greece suggests multiple introduction from different genetic pools. J. Phytopathology. 158: 73-80.

22. **Gounaris Y.** (2010). Biotechnology on the production of essential oils and volatiles. In: Aromatic plants and spices in food and beverages. M.G. Miguel, A.C. Figueiredo (eds). Flavour Fragr. J. 25: 367-386.

23. **Gounaris Y.** (2011). An evolutionary theory based on a protein-mRNA co-synthesis hypothesis. J. Biol. Res.-Thessaloniki 15: 3-16.

24. **Gounaris Y.** (2013). Extrachromosomal genetic elements detected in Escherichia coli treated with the antibacterial agents kanamycin and benzenetriol. J. Biol. Res.-Thessaloniki. 20: 185-194.

25. **Gounaris Y**, Litinas C, Evgenidou E. (2014). A possible prebiotic function of cytosine as amino acid synthesizer. Hypothesis. 12: e5, doi:10.5779/hypothesis.v12i1.369.

26. **Gounaris Y**, Litinas C, Evgenidou E, Petrotos C.(2015). A hypothesis on the posssible contribution of free hypoxanthine and adenine bases in prebiotic amino acid synthesis**.** Hypothesis. 13(1): e7, doi:10.5779/hypothesis.v13i1.393.

27. **Gounaris Y.** (2019). Role of biotechnology in essential oils production from non-herbaceous plants. In: Essential Oil Research - Trends in Biosynthesis, Analytics, Industrial Applications and Biotechnological Production. S. Malik (ed). Springer International Publishing AG. Switzerland.

28. **Gounaris Y**. (2020). A proposed free radical explanation for the differential response of long-day and short-day plants to photoperiod. Journal of Plant Research. 134(1):177-178.

Others:

1. **Gounaris I.** (1984). Studies on chloroplast development in greening *Avena sativa L.* and light-grown *Hordeum vulgare L.* PhD Thesis. Dept. of Biological sciences. University of Lancaster.

2. Wellburn A.R., **Gounaris I**. (1984). Changes in carbohydrate reserves during plastid development. In: Advances in photosynthetic research. v.IV, pp. 6.607-6.613. C.Sybesma ed. Martinus Nijhoff/Jonk, The Hague.

3. Wellburn A.R., **Gounaris I.** Owen J.H., Layburn-Parry J.E.M., Wellburn F.A.M. (1986). Development of bioenergetic function in light-grown seedlings. In: Regulation of chloroplast differentiation. pp. 371-381. G. Akoyounoglou, H. Senger eds. Alan R. Liss, Inc. New York.

4. **Gounaris I**. (1989). Chromoplasts of *Capsicum annuum*- Isolation of proteins and nucleic acids. in: Physiology, biochemistry, and genetics of nongreen plastids. pp. 24-36. Boyer C.D., Shannon J.C., Hardison R.C. edrs. The American society of plant physiologists.

5. Lim H.T., **Gounaris I**., Hardison R., Boyer C.D. (1989). Organization of the plastid DNA of *Cucurbita pepo*.In: Physiology, biochemistry, and genetics of nongreen plastids pp. 269-273. Boyer C.D., Shannon J.C., Hardison R.C. edrs. The American Society of Plant Physiologists.

6. Gustine D. L., Sherwood R. T., **Gounaris I.** (1989). Regulation of apomixis in buffelgrass. Proceedings of the XVI International Meeting on Grasslands, Nice, France

7. **Gounaris Y**. (1991). Search for the primary trigger of cold-sweetening of potato tubers. Valley Potato Grower. 57: 29.

8. **Gounaris Y.** (1992). Sugar accumulation in cold-stored potatoes. Valley Potato Grower 58:19.

9. **Gounaris Y**. (1994). The role of mitochondria in the accumulation of reducing sugars in potato tubers at low temperatures. In: Proc. 5th meeting of the Greek society of plant improvement. Oct 18-20, 1994, Volos, Greece.

10. **Gounaris Y**. (1999). Biotechnology-A new Era in science Journal 'Lamp', March 1999.

11. **Gounaris Y**. (2005). Biotechnology-Myths and truths. Newspaper 'Independent', June 2005.

12. **Gounaris Y.** (2008). Cooperation of primary agricultural production with biotechnology. Newspaper , 'Sarisa', November 2008.

13. **Gounaris Y.** (2009). Production of energy from plant waste matter. Journal 'Drama: Idonian Land', 15: 16-17.

Books by Yannis Gounaris

1. Molecular Genetics. 2000. University of Thessaly Publications
2. Biosyntheses and mechanisms of biological transformations 2007 University of Thessaly Publications.
3. Molecular structures and biochemical processes during the evolution of the organisms. 2009. University of Thessaly Publications.
4. Techniques in Biotechnology, Genetic Engineering, Molecular Biology and Biochemistry. 2012.
5. A common chemical characteristic of plant-derived anticancer compounds. 2019. Lamberts International Publishing.

Teaching notes

1. Plant Molecular Biology and Biotechnology 2009
2. PCR Techniques 1998.
3. Organic chemistry. 1994.

Technical Experience:

Histochemical Techniques

1. Preparation of plant tissue for microscopic examination (fixing, methylsalicilate clearing, paraffin imbedding, sectioning, mounting on microscopy slides).
2. Measuring nuclear DNA content by Feulgen staining and chromosome numbers by Giemsa staining.
3. Callose detection by safranin-fast green staining.

Tissue and cell culture techniques

1. Initiation and culturing of callus tissue from a variety of plant species.
2. Preparation of potato protoplasts, symmetric and asymmetric (mitochondria transfer) protoplast fusion, fusion product culturing, and plant regeneration.

Biochemical techniques

1. Isolation of chloroplasts, chromoplasts, mitochondria, and nuclei.
2. HPLC analysis of chlorophylls and other chlorophyllide esters.
3. Extraction, TLC purification, and NMR spectroscopy of carotenoids.
4. PAGE analysis of photosynthetic protein-pigment complexes.
5. Measurement of chloroplastic chemiosmotic gradients by light-induced redistribution of fluorescent acridines.
6. Estimation of total and reducing sugars by the anthrone and Nelson-Somogyi methods.
7. Extraction, TLC analysis, GC analysis, and bioassays of plant growth regulators.
8. HPLC analysis of polyamines and their conjugates.
9. In vivo protein labeling, extraction of soluble and membrane proteins, analysis by PAGE or 2D IEF/SDS-PAGE, detection by silver staining, fluorography/autoradiography, or other common protein stains.
10. Western blotting of proteins, immunodetection with antibodies.

Molecular Biology techniques

1. Isolation of nuclear, chloroplastic, and mitochondrial DNA.
2. Restriction digestion of DNA and analysis by agarose gel electrophoresis.
3. Isolation and electrophoretic analysis of total, plastidic, and mitochondrial RNA.
4. Northern and Southern blotting and hybridization with radioactive or biotin/ streptavidin-enzyme methods.
5. Construction of gene and restriction maps.
6. Extraction of small dsRNAs (tRNAs, 5S RNA, viroids, snRNAs) by absorption on cellulose CF-11. Analysis by PAGE and silver staining.
7. Isolation of polyA-RNA. Construction of nuclear DNA and cDNA libraries.
8. Screening of libraries with antibody/second antibody-enzyme conjugates or with radioactive probes.
9. Cloning in plasmid vectors.
10. Polymerase chain reaction (PCR)-mediated amplification of DNA.
11. DNA sequencing by the sequenase method.
12. In situ hybridization in thin-sectioned plant tissue samples using biotinylated DNA probes and streptavidin-peroxidase conjugates.