GENETICS LABORATOTY

Staff

Name	Position	e-mail	phone
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The lab is hosting graduate students as well for their diploma thesis.

Research activities

- Genetic improvement in microorganisms of biotechnological interest by molecular technology approaches
- Detection, isolation and characterization of native bacterial plasmids
- Study of the mechanisms of high added value metabolites biosynthesis
- Horizontal gene transfer in bacteria

Laboratory equipment

pH-meters, autoclaves, water baths, horizontal and vertical electrophoresis systems, gel electrophoresis image analysis system, Western analysis, PCR and qPCR, electroporator, hybridization oven, laminar flow, speed vac, benchtop regular and refrigerated centrifuges, incubators, photometers, deionized water system, refrigerators, ultra-low-temperature freezer and regular freezers.

Services

Services in terms of research level concerning study and exploitation of biotechnological microorganisms could be provided.

Research projects

- PYTHAGORAS II, 2005 (Isolation, molecular analysis and biotechnological exploitation of trehalose biosynthetic genes in corynebacteria)
- Cooperation 2012 (Agroindustrial Liquid and Solid Wastes as Raw Materials for the Production of a New Generation Biofuel)
- Cooperation 2012 (Cellulose Nano and Micro-Biotechnology: Applications in Food Industries)
- Regional Operational Programmes (ROP) “Epirus 2014-2020” (Production of innovative Debina wine with low alcohol and sulphur content and improved nutritional characteristics)
- Operational Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK) (Research Infrastructure on Food Bioprocessing Development and Innovation Exploitation- FOOD INNOVATION RI)

Selected publications

- Afendra A.S. and Drainas C. (1987): Expression and stability of a recombinant plasmid in *Zymomonas mobilis* and *Escherichia coli*. Journal of General Microbiology 133: 127-134.

- Douka E., Christogianni A., Koukkou A.I., Afendra A.S. and Drainas, C. (2001). Use of a green fluorescent protein gene as a reporter in *Zymomonas mobilis* and *Halomonas elongata*. FEMS Microbiology Letters 201: 221-227.
- Varsaki A., Lucas M, Afendra A.S., Drainas C. & de la Cruz F. (2003). Genetic and biochemical characterization of MbeA, the relaxase involved in plasmid ColE1 conjugative mobilization. Molecular Microbiology 48: 481-493.
- Afendra A.S., Parapouli M. and Constantin Drainas C. (2011). Catabolic Plasmids and Mobile Genetic Elements Involved in The Degradation of Non-Metal Xenobiotic Compounds. In: Microbial Bioremediation of Non-metals: Current Research (Koukkou A.-I., Ed), Chapter 9, Caister Academic Press, Norfolk, UK, pp. 197-216.
- Konidaris K.F., Giouli M., Raptopoulou C.P., Psycharis V., Verginadis I.I., Vasiliadis A., Afendra A.S., Karkabounas S., Manessi-Zoupa E., Stamatatos T.C. (2013) Employment of pyridyl oximes and dioximes in zinc(II) chemistry: Synthesis, structural and spectroscopic characterization, and biological evaluation. Inorganica Chimica Acta 396: 49–59.
- Stergiou P.-Y., Foukis A., Filippou M., Koukouritaki M., Parapouli M., Theodorou L.G., Hatziloukas E., Afendra A., Pandey A., Papamichael E.M. (2013) Advances in lipase-catalyzed esterification reactions. Biotechnol. Advances 31: 1846–1859.
- Stamatopoulou V., Toumpeki C., Vourekas A, Bikou M., Tsitlaidou M., Tzakos A., Afendra A., Drainas C. and Drainas D. (2014) On the Role of the Appended P19 Element in Type A RNAs of Bacterial RNase P. Biochemistry 53(11): 1810-7.
- Parapouli M., Foukis A., Stergiou P.Y., Koukouritaki M., Magklaras P., Gkini O.A., Papamichael E.M., Afendra A.S., Hatziloukas E. (2018) Molecular, biochemical and kinetic analysis of a novel, thermostable lipase (LipSm) from *Stenotrophomonas maltophilia* Psi-1, the first member of a new bacterial lipase family (X**IX**). J Biol Res (Thessalon). 25:4.