

Brief CV

Associate Professor Dr. KATERINA A. CHLICHLIA

achlichl@mbg.duth.gr



Dr. Katerina Chlichlia is Associate Professor of Molecular Immunobiology at the Department of Molecular Biology & Genetics (DMBG) Democritus University of Thrace (DUTH). She received her PhD from the German Cancer Research Center (DKFZ) and the Faculty of Pharmacy in Heidelberg (1994) and continued for Post-Doctoral studies in Germany, at DKFZ and University of Heidelberg. She was appointed as Assistant Professor (2003) and as Associate Professor (2016) at DMBG/DUTH. She is specialized in the area of Tumor Immunology and Cancer Therapy and her ongoing research deals with the design, construction and application of DNA vaccines for Cancer Immunotherapy. Currently, her research focuses on the anti-tumor, anti-inflammatory and immunostimulatory properties of bioactive compounds and probiotic microorganisms as well as the development of biotechnological tools for improving immunity, in collaboration with faculty members. Recently, her interests expand in the design and application of bioactive nanoparticles for cancer prevention and therapy. She has long experience in molecular biology, immunology, microbiology, cell culture and experimental animal models of preclinical importance and currently works on syngeneic animal tumor models of colon and breast cancer. She serves as Head of the Laboratory of Molecular Immunology. She received fellowships from DAAD (*Deutscher Akademischer Austauschdienst*), EMBO (*European Molecular Biology Organization*), UICC (*International Union Against Cancer*) and DFG (*Deutsche Forschungsgemeinschaft*). She has published 45 articles in peer-reviewed journals (*Scientific Reports, PLoS One, Trends Parasitol, Oncogene, Blood, J Immunol, Vaccine, Gene Therapy*, etc.) (Citations: >900; *h*-factor: 17) and has served as an evaluator in many national and international grant applications and as a reviewer in scientific journals (*PLoS One, OncoTarget, ChemicoBiological Interactions, Current Medicinal Chemistry, Vaccine, Human Immunology, Parasite Immunology*, and others).

Associate Professor Dr. Katerina Chlichlia

Tel. + Fax: 25510-30630 (off.), 25510-30673 (lab)
Email: achlichl@mbg.duth.gr

Dept. Molecular Biology & Genetics, D.U.Th.
University Campus-Dragana
68100 Alexandroupolis, Greece

Participation in selected research grants

1. 2014-2020: National Research Infrastructure "OPENSOURCE-GR: *An Open-Access Research Infrastructure of Target-Based Screening Technologies and Chemical Biology for Human and Animal Health, Agriculture and Environment*". Operational Program Competitiveness, Entrepreneurship and Innovation (EPAnEK). Budget: **3.999.983 €**. Budget for DMBG/DUTH: **269.100 €**. *Position*: Collaborating Researcher.
2. 2013-2015: National Strategic Reference Framework (NSRF-GSRT) Grant "COOPERATION II": "*Novel functional foods containing bioactive essential oils from Greek endemic species with health-promoting properties*". Budget **1.184.000 €**. Budget for DMBG/DUTH: **480.000 €**. *Position*: Principal Investigator.
3. 2013-2015: National Strategic Reference Framework (NSRF-GSRT) Grant "COOPERATION II": "*Functional dairy and meat products with high added value fermented or enriched with new probiotic microorganisms isolated from Greek traditional products*". Budget **1.600.000 €**. Budget for DMBG/DUTH: **190.000 €**. *Position*: Principal Investigator for DMBG/DUTH.
4. 2013-2015: National Strategic Reference Framework (NSRF-GSRT) Grant, Bilateral Cooperation Greece-China 2012-2014: "*Bioactive essential oils and other beneficial substances isolated from Greek and Chinese endemic species with health promoting properties (BioActiveHealth)*". Budget **560.000 €**. Budget for DMBG/DUTH: **160.000 €**. *Position*: Principal Investigator for DMBG/DUTH.
5. 2013-2015: National Strategic Reference Framework (GSRT) Grant, Bilateral Cooperation Greece-China 2012-2014, "*Bee-based natural products as potential cosmeceutical agents with health-promoting properties against UV-induced skin photo-ageing*". Budget **500.000 €**. Budget for DMBG/DUTH: **80.000 €**. *Position*: Collaborating researcher.
6. 2012-2014: Support of Post-Doctoral Researchers: "*Production of Novel Probiotic Food Products: Investigation of anticancer properties*". Budget for DMBG/DUTH **150.000 €**. *Position*: Collaborating researcher.
7. 2010-2013: National Strategic Reference Framework grant "IRAKLITOS II": "*Epigenetic changes in immunoglobulin genes in chronic lymphocytic leukemia*". Budget: **45.000 €**. *Position*: Principal Investigator.
8. 2009-2012: EU grant FP7-Research Capacities 2008-1 / Activity 4.1 - Research potential in the outermost regions. "*BIOSTRENGTH: Strengthening Regional Bioresearch Potential in Greece: Advanced scientific performance at the Department of Molecular Biology and Genetics in Thrace*". Budget for DMBG/DUTH **1.000.000 €**. *Position*: Member of the management committee and work package leader.

Associate Professor Dr. Katerina Chlichlia

Tel. + Fax: 25510-30630 (off.), 25510-30673 (lab)
Email: achlichl@mbg.duth.gr

Dept. Molecular Biology & Genetics, D.U.Th.
University Campus-Dragana
68100 Alexandroupolis, Greece

Publications in international peer-reviewed scientific journals

1. Spyridopoulou K, Aindelis G, Lampri E, Giorgalli M, Lamprianidou E, Kotsianidis I, Tsingotjidou A, Pappa A, Kalogirou O, **Chlichlia K**. Improving the subcutaneous mouse tumor model by effective manipulation of magnetic nanoparticles-treated implanted cancer cells. *Annals of Biomedical Engineering* (2018) *in press*.
2. Mantso T, Vasileiadis S, Anestopoulos I, Voulgaridou GP, Lampri E, Botaitis S, Kontomanolis EN, Simopoulos C, Goussetis G, Franco R, **Chlichlia K**, Pappa A, Panayiotidis MI. Hyperthermia induces therapeutic effectiveness and potentiates adjuvant therapy with non-targeted and targeted drugs in an *in vitro* model of human malignant melanoma. *Scientific Reports* (2018) 8(1), 10724.
3. Simitsopoulou M, **Chlichlia K**, Kyrpitzis D, Walsh TJ, Roilides E. Pharmacodynamic and immunomodulatory effects of micafungin on host responses against biofilms of *Candida parapsilosis* in comparison to those of *Candida albicans*. *Antimicrobial Agents and Chemotherapy* (2018) 62(8), e00478-18.
4. Spyridopoulou K, Makridis A, Maniotis N, Karypidou N, Myrovali E, Samaras T, Angelakeris M, **Chlichlia K**, Kalogirou O. Effect of low frequency magnetic fields on the growth of MNP-treated HT29 colon cancer cells. *Nanotechnology* (2018) 29(17), 175101.
5. Fitsiou E, Mitropoulou G, Spyridopoulou K, Vamvakias M, Bardouki H, Galanis A, **Chlichlia K**, Kourkoutas Y, Panayiotidis MI, Pappa A. Chemical composition and evaluation of the biological properties of the essential oil of the dietary phytochemical *Lippia citriodora*. *Molecules* (2018) 23(1), 123.
6. Spyridopoulou K, Tiptiri-Kourpeti A, Lampri E, Fitsiou E, Vasileiadis S, Vamvakias M, Bardouki H, Goussia A, Malamou-Mitsi V, Panayiotidis MI, Galanis A, Pappa A, **Chlichlia K**. Dietary mastic oil extracted from *Pistacia lentiscus* var. *chia* suppresses tumor growth in experimental colon cancer models. *Scientific Reports* (2017) 7(1), 3782.
7. Mitropoulou G, Fitsiou E, Spyridopoulou K, Tiptiri-Kourpeti A, Bardouki H, Vamvakias M, Panas P, **Chlichlia K**, Pappa A, Kourkoutas Y. *Citrus medica* essential oil exhibits significant antimicrobial and antiproliferative activity. *LWT - Food Science and Technology* (2017) 84, 344-352.
8. Anestopoulos I, Sfakianos AP, Franco R, **Chlichlia K**, Panayiotidis MI, Kroll DJ, Pappa A. A novel role of silibinin as a putative epigenetic modulator in human prostate carcinoma. *Molecules* (2017) 22(1), 62.
9. Fitsiou E, Anestopoulos I, **Chlichlia K**, Galanis A, Kourkoutas I, Panayiotidis MI, Pappa A. Antioxidant and antiproliferative properties of the essential oils of *Satureja thymbra* and *Satureja parnassica* and their major constituents. *Anticancer Research* (2016) 36(11), 5757-5763.
10. Tiptiri-Kourpeti A, Spyridopoulou K, Pappa A, **Chlichlia K**. DNA vaccines to attack cancer: Strategies for improving immunogenicity and efficacy. *Pharmacology and Therapeutics* (2016) 165, 32-49.
11. Voulgaridou G-P, Kiziridou M, Mantso T, **Chlichlia K**, Galanis A, Koukourakis MI, Franco R, Panayiotidis MI, Pappa, A. Aldehyde dehydrogenase 3A1 promotes multi-modality resistance and alters gene expression profile in human breast adenocarcinoma MCF-7 cells. *International Journal of Biochemistry and Cell Biology* (2016) 77, 120-128.

12. Fitsiou E, Mitropoulou G, Spyridopoulou K, Tiptiri-Kourpeti A, Vamvakias M, Bardouki H, Panayiotidis MI, Galanis A, Kourkoutas Y, **Chlichlia K**, Pappa A. Phytochemical profile and evaluation of the biological activities of essential oils derived from the greek aromatic plant species *Ocimum basilicum*, *Mentha spicata*, *Pimpinella anisum* and *Fortunella margarita*. *Molecules* (2016) 21(8), 1069.
13. Saxami G, Karapetsas A, Lamprianidou E, Kotsianidis I, **Chlichlia A**, Tassou, C, Zoumpourlis V, Galanis A. Two potential probiotic lactobacillus strains isolated from olive microbiota exhibit adhesion and anti-proliferative effects in cancer cell lines. *Journal of Functional Foods* (2016) 24, 461-471.
14. Tiptiri-Kourpeti A, Spyridopoulou K, Santarmaki V, Aindelis G, Tompoulidou E, Lamprianidou EE, Saxami G, Ypsilantis P, Lampri ES, Simopoulos C, Kotsianidis I, Galanis A, Kourkoutas Y, Dimitrellou D, **Chlichlia K**. *Lactobacillus casei* exerts anti-proliferative effects accompanied by apoptotic cell death and upregulation of TRAIL in colon carcinoma cells. *PLoS ONE* (2016) 11(2), e0147960.
15. Poulatsidou K-N, Lagoudaki R, Touloumi O, Kesidou E, Boziki M, Ravanidis S, **Chlichlia K**, Grigoriou M, Grigoriadis N. Immunophenotype of mouse cerebral hemisphere-derived neural precursor cells. *Neuroscience Letters* (2016) 611, 33-39.
16. Ravanidis S, Poulatsidou KN, Lagoudaki R, Touloumi O, Polyzoidou E, Loubopoulos A, Nousiopoulos E, Theotokis P, Kesidou E, Tsalikakis D, Karacostas D, Grigoriou M, **Chlichlia K**, Grigoriadis N. Subcutaneous transplantation of neural precursor cells in experimental autoimmune encephalomyelitis reduces chemotactic signals in the central nervous system. *Stem Cells Translational Medicine* (2015) 4(12), 1450-1462.
17. Apostolou P, Toloudi M, Chatziioannou M, Kourtidou E, Mimikakou G, Vlachou I, **Chlichlia A**, Papisotiriou I. Involvement of retrotransposon L1 in stemness and cellular plasticity. *Cell Communication and Adhesion* (2015) 22(1), 1-7.
18. Papakonstantinou N, Ntoufa S, Chartomatsidou E, Papadopoulos G, Hatzigeorgiou A, Anagnostopoulos A, **Chlichlia K**, Ghia P, Muzio M, Belessi C, Stamatopoulos K. Differential microRNA profiles and their functional implications in different immunogenetic subsets of chronic lymphocytic leukemia. *Molecular Medicine* (2013) 19(1), 115-123.
19. Voulgaridou G-P, Mantso T, **Chlichlia K**, Panayiotidis MI, Pappa A. Efficient *E. coli* Expression Strategies for Production of Soluble Human Crystallin ALDH3A1. *PLoS ONE* (2013) 8(2), e56582.
20. Tsiamita M, Pavlaki M, Toloudi M, Tiptiri-Kourpeti A, Drossou V, Apostolou P, Chatziioannou M, Ioannou E, Papisotiriou I, **Chlichlia K**. Development of a sensitive cost-effective capture ELISA for detection of murine monoclonal antibodies - correlation with SPR biosensor technology. *Anti-Inflammatory and Anti-Allergy Agents in Medicinal Chemistry* (2012) 11(2), 173-181.
21. Bogiatzi SI, Guillot-Delost M, Cappuccio A, Bichet J-C, Chouchane-Mlik O, Donnadiou M-H, Barillot E, Hupé P, Chlichlia K, Efremidou EI, Aractingi S, Bayrou O, Soumelis V. Multiple-checkpoint inhibition of thymic stromal lymphopoietin-induced TH2 response by TH17-related cytokines. *Journal of Allergy and Clinical Immunology* (2012) 130(1), 233-240.
22. **Chlichlia K**, Khazaie K. HTLV-1 Tax: Linking transformation, DNA damage and apoptotic T-cell death. *Chemico-Biological Interactions* (2010) 188(2), 359-365.

23. Xagorari A, **Chlichlia K**. Toll-like receptors and viruses: induction of innate antiviral immune responses. *The Open Microbiology Journal* (2008) 2, 49-59.
24. **Chlichlia K**, Schirmmacher V, Sandaltzopoulos R. Cancer immunotherapy: Battling tumors with gene vaccines. *Current Medicinal Chemistry: Anti-Inflammatory and Anti-Allergy Agents* (2005) 4(4), 353-365.
25. **Chlichlia K**, Schauwienold B, Kirsten C, Doenhoff MJ, Fishelson Z, Ruppel A. *Schistosoma japonicum* reveals distinct reactivity with antisera directed to proteases mediating host infection and invasion by cercariae of *S. mansoni* or *S. haematobium*. *Parasite Immunology* (2005) 27(3), 97-102.
26. Karagianni N, Ly M-C, Psarras S, **Chlichlia K**, Schirmmacher V, Gounari F, Khazaie K. Novel adenomatous polyposis coli gene promoter is located 40 kb upstream of the initiating Methionine. *Genomics* (2005) 85(2), 231-237.
27. Ruppel A, **Chlichlia K**, Bahgat M. Invasion by schistosome cercariae: Neglected aspects in *Schistosoma japonicum*. *Trends in Parasitology* (2004) 20(9), 397-400.
28. Kreuter M, Langer C, Kerkhoff C, Reddanna P, Kania AL, Maddika S, **Chlichlia K**, Bui TN, Los M. Stroke, myocardial infarction, acute and chronic inflammatory diseases: Caspases and other apoptotic molecules as targets for drug development. *Archivum Immunologiae et Therapiae Experimentalis* (2004) 52(3), 141-155.
29. Long X-C, Bahgat M, **Chlichlia K**, Ruppel A, Li Y-L. Detection of inducible nitric oxide synthase in *Schistosoma japonicum* and *S. mansoni* *Journal of Helminthology* (2004) 78(1), 47-50.
30. Boissier J, **Chlichlia K**, Digon Y, Ruppel A, Moné H. Preliminary study on sex-related inflammatory reactions in mice infected with *Schistosoma mansoni*. *Parasitology Research* (2003) 91(2), 144-150.
31. Bahgat M, **Chlichlia K**, Schirmmacher V, Ruppel, A. Antibodies induced in mice by a DNA-construct coding for the elastase of *Schistosoma mansoni* recognize the enzyme in secretions and preacetabular glands of cercariae. *Parasitology* (2002) 124(3), 301-306.
32. **Chlichlia K**, Bahgat M, Schirmmacher V, Ruppel, A. Species-restricted antibody response against a DNA-construct coding for aspartic proteinase from *Schistosoma japonicum*. *Parasitology Research* (2002) 88(4), 368-375.
33. **Chlichlia K**, Los M, Schulze-Osthoff K, Gazzolo L, Schirmmacher V, Khazaie K. Redox events in HTLV-1 tax-induced apoptotic T-cell death. *Antioxidants and Redox Signaling* (2002) 4(3), 471-477.
34. Michalke M, Stroh C, **Chlichlia K**, Stepczynska A, Mozoluk M, Los M. The emerging role of caspases in signal transduction as revealed by knock-out studies - Not only Apoptosis. *Signal Transduction* (2001) 1(1-2), 51-65.
35. **Chlichlia K**, Bahgat M, Ruppel A, Schirmmacher V. DNA vaccination with asparaginyl endopeptidase (Sm32) from the parasite *Schistosoma mansoni*: Antifecundity effect induced in mice. *Vaccine* (2001) 20(3-4), 439-447.
36. Li-Weber M, Giiasi M, **Chlichlia K**, Khazaie K, Krammer PH. Human T cell leukemia virus type I tax enhances IL-4 gene expression in T cells. *European Journal of Immunology* (2001) 31(9), 2623-2632.

37. Umansky V, Ushmorov A, Ratter F, **Chlichlia K**, Bucur M, Lichtenauer A, Rocha M. Nitric oxide-mediated apoptosis in human breast cancer cells requires changes in mitochondrial functions and is independent of CD95 (APO-1/Fas). *International journal of Oncology* (2000) 16(1), 109-117.
38. Schirmmacher V, Förg P, Dalemans W, **Chlichlia K**, Zeng Y, Fournier P, Von Hoegen P. Intra pinna anti-tumor vaccination with self-replicating infectious RNA or with DNA encoding a model tumor antigen and a cytokine. *Gene Therapy* (2000) 7(13), 1137-1147.
39. Los M, Khazaie K, Schulze-Osthoff K, Baeuerle PA, Schirmmacher V, **Chlichlia K**. Human T cell leukemia virus-I (HTLV-I) tax-mediated apoptosis in activated T cells requires an enhanced intracellular prooxidant state. *Journal of Immunology* (1998) 161(6), 3050-3055.
40. **Chlichlia K**, Peter ME, Rocha M, Scaffidi C, Bucur M, Krammer PH, Schirmmacher V, Umansky V. Caspase activation is required for nitric oxide-mediated, CD95 (APO-1/Fas) - Dependent and independent apoptosis in human neoplastic lymphoid cells *Blood* (1998) 91(11), 4311-4320.
41. Rehberger S, Gounari F, Ducdodon M, **Chlichlia K**, Gazzolo L, Schirmmacher V, Khazaie, K. The activation domain of a hormone inducible HTLV-1 Rex protein determines colocalization with the nuclear pore. *Experimental Cell Research* (1997) 233(2), 363-371.
42. **Chlichlia K**, Busslinger M, Peter ME, Walczak H, Krammer PH, Schirmmacher V, Khazaie, K. ICE-proteases mediate HTLV-I tax-induced apoptotic T-cell death. *Oncogene* (1997) 14(19), 2265-2272.
43. **Chlichlia K**, Moldenhauer G, Daniel PT, Busslinger M, Gazzolo L, Schirmmacher V, Khazaie, K. Immediate effects of reversible HTLV-1 tax function: T-cell activation and apoptosis. *Oncogene* (1995) 10(2), 269-277.
44. Jung M, Krämer E, Grzenkowski M, Tang K, Blakemore W, Aguzzi A, Khazaie K, **Chlichlia K**, von Blankenfeld G, Kettenmann H, Trotter, J. Lines of murine oligodendroglial precursor cells immortalized by an activated *neu* tyrosine kinase show distinct degrees of interaction with axons *in vitro* and *in vivo*. *European Journal of Neuroscience* (1995) 7(6), 1245-1265.
45. Lanaras T, Tsitsamis S, **Chlichlia K**, Cook CM. Toxic cyanobacteria in Greek freshwaters. *Journal of Applied Phycology* (1989) 1, 67-73.