

## KATERINA GRAFANAKI BSc, MSc, MD, PhD

### Curriculum Vitae

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**Work address:**

University of Patras  
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### EDUCATION AND POSITIONS

**2016-Today:** Faculty staff (E.D.I.P; Special Research and Teaching Personnel) in Medical Biochemistry-Immunology and Allergy, School of Medicine, University of Patras.

**2009-Today:** Executive Research Associate of the Unit of Special Biochemical Analyses, University of Patras.

**2016: PhD,** University of Patras, School of Medicine, Department of Biochemistry.

**2010-2012:** Intern in Internal Medicine at the Kalavryta General Hospital, Kalavryta, Greece (Internal Medicine involving - Endocrinology, General Medicine, Cardiology - Outpatients Department, Accidents and Emergency).

**2009:** Medical license (registration number 135191, Medical Board of Patras 5276)

**2009: M.D.,** Medical Degree, School of Medicine, University of Thessaly, Larissa, Greece. (Grade: Very Good)

**2006-2008:** Clinic Rotation in Internal Medicine, Cardiology, Neurology, Paediatrics, Surgery, Orthopaedics, Obstetrics and Gynaecology, Psychiatry (University Hospital of Larissa).

**1998: M.Sc. in Immunology and Allergy,** University of Nottingham, School of Medicine, U. K.

Immunity and the Immune system, Research Methods, Library Dissertation, Molecular Allergy, Advanced Immunobiology, Clinical Allergy, Clinical Immunology, Biotechnology, Research Project and Dissertation.

**1997: B.Sc. with Honours in Biomedical Sciences,** 2:1 Anglia Polytechnic University, Cambridge, U. K.

**Foreign languages:** English (excellent), German (fluent), French (Beginner)

### WORK AND RESEARCH EXPERIENCE

1. Royal Victoria Infirmary Hospital (Newcastle, U.K) at the ER Department (**April 1993**)
2. Training in biochemical and clinical biochemistry techniques (cell cultures, flow cytometry, MTT viability assays, radiolabelling, immunohistochemistry), University of Nottingham, Dept. of Immunology, School of Medicine, Queens Medical Center και Nottingham City Hospital, UK (**1997-1998**)
3. Teaching Assistant (Biology and Chemistry) of foundation courses for candidates for UK Universities (**summer 1997 and summer 1998**).
4. Research associate at the University of Athens, School of Medicine, Department of Pathophysiology. Training in ELISA, Western Blotting, affinity purification, RIA, CIE (and routine techniques) and detection of autoimmune diseases (**February 1998 – November 1999**).
5. Research Associate for the National Cancer Institute. Training and experience in PBMC isolation, T cell cloning, proliferation assays, cytotoxic assays, immunofluorescence, immortalization assays, flow cytometry (FACS), magnetic cell sorting (MACS) (**1999-2000**).
6. Research associate of the Functional and Clinical Biochemistry group at the Institute for Biomedical Research of Thessaly (**2007-2009**). Training and experience in current Molecular Biology techniques.
7. Scientific and Technical supervision of the the Unit of Special Biochemical Analyses of the University of Patras, Training and experience in Isoelectric focusing and DNA microarrays analysis (**2009-Today**).
8. Placement for Medical Internship in Internal Medicine at the Hospital of Kalavryta. (**2010-2012**).
9. Advanced Trauma Life Support (**ATLS**) (**2010**).

10. First Aid and Rescue Doctor at Kalavryta Ski Center (**Winter 2012 – 2014**)
11. External collaborator (MD) of the Hellenic Red Cross and Samaritans (**2012-Today**).
12. External collaborator (MD) of the Office for Physical Education, Prefecture of Western Greece (**2013-Today**).
13. External collaborator (MD) at the International Olympic Academy (**2013-Today**).
14. Volunteer MD for the National Registry of Bone Marrow Donation, education programme for recruiting volunteer bone marrow donors (**2015-Today**).

#### TEACHING DUTIES

1. Responsible for the lab practicals of 2<sup>nd</sup> year medical students for Biochemistry II and III.
2. Teaching of DNA arrays, ELISA and Isoelectric Focusing in methodologies of Master's Program in Biomedical Sciences.
3. Teaching of PBLs in the Master's Program "Public Health".
4. Assistance in supervision of 5 Master's students.

#### PARTICIPATION IN RESEARCH GRANTS

1. GSRT 2003, Greece-France Bilateral R&D collaboration (PLATON-EGIDE)
2. Hellenic Society of Orthopaedics & Trauma 2007 (BIOMED Institute, Larissa)
3. Hellenic Society of Orthopaedics & Trauma 2011
4. GSRT 2011 «ARISTEIA» ("Excellence"), "Dissecting the involvement and dynamic networks of tRNA expression, signaling and translation in lung cancer"
5. "Fondation Sante 2016" "Switching from adaptation to regulation: the role of the *S. aureus glyS* T-box riboswitch

#### PARTICIPATION IN TRAINING PROGRAMS

1. **2008:** LLP-ERASMUS exchange visit at the Laboratory of Prof. Hubert D. Becker, University of Strasbourg, France.
2. **2010:** Advanced Trauma Life Support (ATLS) course, University of Patras, School of Medicine.
3. **2013:** First Aid Course for Citizens, Hellenic Red Cross –Samaritans, Rescuers and Lifeguards Sector.
4. **2016:** LLP-ERASMUS exchange visit at the Laboratory of Prof. Hubert D. Becker, University of Strasbourg, France.

#### AWARDS

**2007**, 2nd Conference of the Hellenic Society of Arthroscopy, 1<sup>st</sup> Prize

#### MEMBERSHIPS

BSI (British Society of Immunology)  
 EAACI (European Academy of Allergology and Clinical Immunology)  
 Hellenic Society of Biochemistry and Molecular Biology  
 Member of the Hellenic Medical Association  
 Member of the Medical Board of Patras

## **PUBLICATIONS**

### Dissertations

1. Functional genomic analysis of the effect of retinoid analogues on human keratinocytes (PhD Thesis 2016).
2. The effect of female sex hormones on human airway smooth muscle proliferation. (September 1998, Master's Research Dissertation).
3. Understanding the immunologic basis of the mechanisms involved in transplantation rejection. (December 1998, Master's Bibliographic Dissertation)
4. HIV treatment. (April 1997, B. Sc. Thesis)

### In peer-reviewed journals

1. Papatheodorou L. K., Malizos K. N., Poultsidis L. A., Hantes M. E., Giannouli S., **Grafanaki K.**, Ioannou M. G., Koukoulis G. K., Protopappas V. C., Fotiadis D. I. and Stathopoulos C. (2009) Effect of transosseous application of low-intensity ultrasound at the tendon graft-bone interface healing: Gene expression and histological analysis in rabbits. *Ultrasound Med Biol* **35**: 576-584.
2. Bariamis S. E., Magoulas G. E., **Grafanaki K.**, Pontiki E., Tsegenidis T., Athanassopoulos C. M., Maroulis G., Papaioannou D. and Hadjipavlou-Litina D. (2015) Synthesis and Biological Evaluation of New C-10 Substituted Dithranol Pleiotropic Hybrids. *Bioorganic & Medicinal Chemistry*, **23**: 7251-7263.
3. Dailiana Z. H., Christou D. C., **Grafanaki K.**, Ioannou M. G., Stathopoulos C., Malizos K. N. and Varitimidis S. (2016) Histological and biochemical evidence related to the collagen quality in torn rotator cuff tendons. *Acta Orthopaedica Belgica* **82**: 179-188.
4. Petridis T., Giannakopoulou D., Stamatopoulou V., **Grafanaki K.**, Kostopoulos C. G., Papadaki H., Malavaki C.J., Karamanos N. K., Douroumi S., Papachristou D., Magoulas G. E., Papaioannou D. and Drainas D. (2015) Investigation on toxicity and teratogenicity in rats of a retinoid-polyamine conjugate with potent anti-inflammatory properties. *Birth Defects Res B Dev Reprod Toxicol* **107**:32-44.
5. Anastasakis D., Skeparnias I., Shaukat N-A., **Grafanaki K.**, Kanellou A., Taraviras S., Papachristou D. J., Papakyriakou A. and Stathopoulos C. (2016) Mammalian PNLDC1 is a novel poly(A) specific exonuclease with discrete expression during early development. *Nucleic Acids Res* **44**: 8908-8920.
6. Anastasakis D., Skeparnias I., Shaukat N-A., **Grafanaki K.** and Stathopoulos C. (2017) PNLDC1 regulates the crossroads between piRNA biogenesis and mRNA turnover. *RNA Biology In press* doi: 10.1080/15476286.2017.1300222.
7. **Grafanaki K.**, Evangelou K., Anastasakis D., Kyriakopoulos G., Symeonidis S., Megas P. and Stathopoulos C. (2017) Molecular and epigenetic crosstalk of networks activating inflammasome in patients with aseptic loosening after total hip arthroplasties. *In preparation*.
8. **Grafanaki K.**, Anastasakis D., Kontos C., E. Korfiati., Theofilatos K., Papaioannou D., Scorilas A., Stathopoulos C. and Drainas D. (2017) Transcriptomics analysis of human keratinocytes reveals anti-cancer basis of a novel synthetic retinoid-polyamine conjugate with limited toxicity. *In preparation*.

### Book chapters

1. Toumpeki C., Stamatopoulou V., Bikou M., **Grafanaki K.**, Stathopoulos C. and Drainas D. (2014) Targeting RNase P. In: "Antibiotics: Targets, Mechanisms and Resistance" Eds C. Gualerzi, L. Brandi, A. Fabbreti and C. L. Pon **Wiley-VCH Verlag GmbH & Co.** (Chapter 14, pp 355-366).

### Abstracts in international conferences

1. **Grafanaki K.**, Christoforaki P., Doulianiaki E., Mamzoridou K. and Syrogiannopoulos G. (2004) Homeopathic medicines: Are they therapeutic agents? 19<sup>th</sup> I.M.S.S.C. 6-9 May 2004, Istanbul, TURKEY.
2. Christoforaki P., **Grafanaki K.**, Doulianiaki E., Mamzoridou K. and Syrogiannopoulos G. (2004) Drug utilization study: Homeopathic medicines in Greece. 19<sup>th</sup> I.M.S.S.C. 6-9 May 2004, Istanbul, TURKEY.
3. Christou D. C., Varitimidis S., **Grafanaki K.**, Stathopoulos C., Ioannou M. and Malizos K. N. (2007) Histological and biochemical analysis in torn rotator cuff tendons and post-surgical prognosis. 53<sup>rd</sup> Orthopaedic Research Society Annual Meeting, February 11-14 2007, San Diego, USA.
4. Christou D. C., Varitimidis S., **Grafanaki K.**, Stathopoulos C., Ioannou M. and Malizos K. N. (2007) Histological and biochemical analysis in torn rotator cuff tendons and post-surgical prognosis. 8<sup>th</sup> E.F.O.R.T. Congress, May 11-15 2007, Florence, ITALY.
5. Papatheodorou L. K., Poultsidis L. A., Hantes M., **Grafanaki K.**, Stathopoulos C. and Malizos K. N. (2007) Effect of transosseous application of low-intensity ultrasound on gene expression at tendon graft-bone interface in rabbits. 8<sup>th</sup> E.F.O.R.T. Congress, May 11-15 2007, Florence, ITALY.
6. Papatheodorou L. K., Poultsidis L. A., Hantes M., **Grafanaki K.**, Stathopoulos C. and Malizos K. N. (2007) Transosseous application of Low-Intensity Ultrasound on healing at tendon graft -bone interface in rabbits results in altered gene expression levels. 2<sup>nd</sup> ESUCB, July 19-20 2007, Halle-Wittenberg, GERMANY.
7. Papatheodorou L. K., Poultsidis L. A., Hantes M., **Grafanaki K.**, Stathopoulos C. and Malizos K. N. (2008) Gene expression analysis in healing at tendon graft-bone interface in rabbits after transosseous application of Low-Intensity Ultrasound. 13<sup>th</sup> ESSKA, 21-24 May, Porto, PORTUGAL.
8. Papatheodorou L. K., **Grafanaki K.**, Giannouli S., Fotiadis D. I., Stathopoulos C. and Malizos K. N. (2008) Transosseous application of low-intensity ultrasound at the tendon graft-bone interface affects the healing rate and up-regulates simultaneously the expression of collagen type I and tRNA<sup>Gly</sup>. 8<sup>th</sup> IEEE International Conference on Bioinformatics and Bioengineering (BIBE 2008). October 8-10 Athens, GREECE.
9. Papatheodorou L. K., Malizos K. N., Hantes M., **Grafanaki K.**, Karantanas A. and Stathopoulos C. (2010) Low-Intensity ultrasound enhances tendon graft-bone interface healing in anterior cruciate ligament reconstruction: a biochemical and image analysis in human. 14<sup>th</sup> ESSKA 9-12 June Oslo, NORWAY.
10. Varitimidis S., Daliana Z., Christou D., Ioannou M., Chaldi L., Stathopoulos C., **Grafanaki K.** and Malizos K. N. (2010) Histological and biochemical evidence related to the collagen quality in torn rotator cuff tendons. 11<sup>th</sup> Triennial Congress of the International Federation of Societies for Surgery of the Hand. 31 October - 4 November 2010, Seoul, KOREA.
11. Evangelou K., **Grafanaki K.**, Anastasakis D., Georgiou C, Stathopoulos C. and Megas P. (2014) Investigation of changed value levels of miRNAs that regulate inflammation in painful loosened total hip arthroplasties. EORS 22<sup>nd</sup> Annual Meeting, 2-4 July 2014, Nantes, France.
12. Anastasakis D., Skeparnias I., Apostolidi M., **Grafanaki K.**, Papakyriakou A. and Stathopoulos C. (2014) Characterization of mammalian PNLDC1: a novel and specific poly(A) ribonuclease. FEBS-EMBO Conference. August 30<sup>th</sup>- Sept 4<sup>th</sup> Paris, FRANCE.
13. Anastasakis D., **Grafanaki K.**, Kontos C., Skeparnias I., Apostolidi M., Konstantinidou P., Alexopoulos P., Gioutlakis A., Kostopoulou O. N., Dougenis D., Kalpaxis D. L., Drinas D., Moschonas N. K., Scorilas A. and Stathopoulos C. (2014) Monitoring the expression dynamics of networks controlling tRNA expression, signaling and translation in lung cancer. 25<sup>th</sup> tRNA Conference 21-25 Sept Kyllini, GREECE.
14. **Grafanaki K.**, Anastasakis D., Kontos C., Magoulas G., Papaioannou D., Scorilas A., Stathopoulos C. and Drinas D. (2016) Transcriptomics analysis reveals anti-cancer basis of a novel synthetic retinoid-polyamine conjugate with limited toxicity. 13<sup>th</sup> EADV Spring Symposium, 19-22 May Athens, GREECE.
15. Anastasakis D., Skeparnias I., Shaukat N-A., **Grafanaki K.**, Kanellou A., Taraviras S., Papachristou D. J., Papakyriakou A. and Stathopoulos C. (2016) Characterization of mammalian PNLDC1: a novel deadenylase expressed specifically during early development. 3<sup>rd</sup> EMBO Conference on mRNA lifecycle, 5-8 October EMBL Heidelberg, GERMANY.

16. **Grafanaki K.**, Kontos C., Korfiati A., Shaukat A., Papaioannou D., Scorilas A., Stathopoulos C. and Drinas D. (2017) The synthetic retinoid-polyamine conjugate RASP induces S/G2 cell cycle arrest and DNA damage response on HaCat cells. 13th Congress of the EADO, 3-6 May 2017, Athens, GREECE.
17. Evangelou K., **Grafanaki K.**, Anastasakis D., Georgiou C., Konstantopoulou A., Megas P. and Stathopoulos C. (2017) Molecular and epigenetic crosstalk of networks activating inflammasome in patients with aseptic loosening following total hip arthroplasty. 18th EFORT Congress in Vienna from 31 May - 02 June 2017, AUSTRIA.
18. Evangelou K., **Grafanaki K.**, Anastasakis D., Georgiou C., Konstantopoulou A., Stathopoulos K. and Megas P. (2017) Molecular and epigenetic crosstalk of networks activating inflammasome in patients with aseptic loosening following total hip arthroplasty. The BOA Annual Congress 2017 - ACC Liverpool - from 19<sup>th</sup> – 22<sup>nd</sup> September 2017, UK.

#### Abstracts in national conferences

1. Papatheodorou L. K., Poultsidis L. A., Malissovass N., **Grafanaki K.**, Stathopoulos C. and Malizos K. N. (2006) Effect of transosseous application of low-intensity ultrasound on gene expression at tendon graft-bone interface healing in rabbits. 6<sup>th</sup> Congress of the Hellenic Society of Clinical Chemistry and Clinical Biochemistry, Athens 9-11 November 2006.
2. Malissovass N., Papatheodorou L. K., Poultsidis L. A., **Grafanaki K.**, Malizos K. N. and Stathopoulos C. (2006) Increased expression levels of cytoplasmic tRNA<sup>Gly</sup> gene are correlated with elevated collagen synthesis at tendon graft-bone interface healing in rabbits. 6<sup>th</sup> Congress of the Hellenic Society of Clinical Chemistry and Clinical Biochemistry, Athens 9-11 November 2006.
3. Papatheodorou L. K., Poultsidis L. A., Malissovass N., **Grafanaki K.**, Stathopoulos C. and Malizos K. N. (2006) Molecular investigations on ligamentization of low-intensity ultrasound at tendon graft-bone interface healing. 4<sup>th</sup> Congress of the Orthopaedic Research Section of the Hellenic Society of Surgical Orthopaedics and Traumatology, Porto Heli 24-26 November 2006.
4. Papatheodorou L. K., Poultsidis L. A., Hantes M., **Grafanaki K.**, Stathopoulos C. and Malizos K. N. (2007) Gene expression analysis in healing at tendon graft -bone interface in rabbits after transosseous application of low-Intensity ultrasound 9<sup>th</sup> National Conference of Connective Tissue Research, Athens 10-12 May 2007.
5. Papatheodorou L. K., Poultsidis L. A., Hantes M., **Grafanaki K.**, Stathopoulos C. and Malizos K. N. (2007) Molecular investigations at tendon graft-bone interface healing in rabbits after transosseous application of low-intensity ultrasound. Ultrasound 8<sup>th</sup> National Conference of Ultrasound, Athens 1-4 June 2007.
6. Papatheodorou L. K., Poultsidis L. A., Hantes M., **Grafanaki K.**, Stathopoulos C. and Malizos K. N. (2007) Gene expression analysis in healing at tendon graft -bone interface in rabbits after transosseous application of low-intensity ultrasound 2<sup>nd</sup> Congress of the Hellenic Arthroscopic Society, Athens 11-15 June 2007.
7. Papatheodorou L. K., Poultsidis L. A., Hantes M., **Grafanaki K.**, Stathopoulos C. and Malizos K. N. (2007) Molecular investigations at tendon graft-bone interface healing in rabbits after transosseous application of low-intensity ultrasound. Ultrasound 8<sup>th</sup> National Conference of Ultrasound, Athens 1-4 June 2007.
8. Stathopoulos C., Giannouli S., Labrou M., Kyritsis A., **Grafanaki K.**, Maniatis A and Pournaras, S. (2008) Mechanisms of cell wall synthesis in *Staphylococcus aureus*. Correlation with oxacillin resistance. 5<sup>th</sup> National Conference of Medical Biopathology, Thessaloniki 9-12 April 2008.
9. **Grafanaki K.**, Katsogridaki G., Pournaras S. and Stathopoulos C. (2009) Correlation of leptin levels with metabolic risk factors for cardiovascular disease. Hellenic Society of Biochemistry and Molecular Biology NEWSLETTER, 55.
10. Anastasakis D., Maragozidis P., Kyritsis A., **Grafanaki K.**, Balatsos N.A.A. and Stathopoulos C. (2010) Effect of PAN2 deadenylase silencing on the expression of essential genes that regulate major cellular pathways. Hellenic Society of Biochemistry and Molecular Biology NEWSLETTER, 56.
11. Fakiolas S., **Grafanaki K.**, Apostolidi M., Anastasakis D., Sakellaropoulos G., Drinas D and Stathopoulos C. (2012) Analysis of the effect of known antipsoriasis drugs on the expression of the whole human genome

using DNA microarrays. 3<sup>rd</sup> Conference of the Panhellenic Union of Bioscientists. Patras 18-20 October 2012.

12. Evangelou K., **Grafanaki K.**, Anastasakis D., Stathopoulos C. and Megas P. (2013) Investigation on the expression levels of miRNAs, which regulate inflammation in painful relaxed hip arthroplasties. 69<sup>th</sup> Annual Congress of the Hellenic Society of Surgery and Trauma, Athens 3-5 October 2013.
13. Anastasakis D., Skeparnias I., Apostolidi M., **Grafanaki K.**, Papakyriakou A. and Stathopoulos C. (2013) Studies on human *pnlDC1*: a *parn* paralog encoding a novel DEDD deadenylase. Hellenic Society of Biochemistry and Molecular Biology NEWSLETTER, 59.
14. Anastasakis D., **Grafanaki K.**, Kontos C., Skeparnias I., Apostolidi M., Konstantinidou P., Alexopoulos P., Gioutlakis A., Dougenis D., Drinas D., Moschonas N.K., Scorilas A. and Stathopoulos C. (2014) Monitoring the expression dynamics of networks controlling tRNA expression, signaling and translation in lung cancer. Hellenic Society of Biochemistry and Molecular Biology NEWSLETTER, 60.
15. **Grafanaki K.**, Anastasakis D., Fakiolas S., Magoulas G., Malavaki C.J., Kontos C., Scorilas A., Karamanos N.K., Papaioannou D., Drinas D. (2014) Functional genomic analysis of a novel retinoid-polyamine conjugate exhibiting anti-inflammatory and anti-cancer properties. Hellenic Society of Biochemistry and Molecular Biology NEWSLETTER, 60.
16. Anastasakis D., **Grafanaki K.**, Kontos C., Skeparnias I., Apostolidi M., Konstantinidou P., Alexopoulos P., Gioutlakis A., Dougenis D., Drinas D., Moschonas N.K., Scorilas A. and Stathopoulos C. (2015) Monitoring the expression dynamics of networks controlling tRNA expression, signaling and translation in lung cancer. 37<sup>th</sup> Hellenic Society of Biological Sciences Conference Conference, Volos 21-23 May 2015.
17. **Grafanaki K.**, Anastasakis D., Kontos C., Spadidea P, Magoulas P., Papaioannou D., Scorilas A. and Drinas D. (2015) The retinoid-polyamine conjugate RASP exhibits anti-tumour activity through effects on cell cycle regulation. Hellenic Society of Biochemistry and Molecular Biology NEWSLETTER, 61.
18. Anastasakis D., **Grafanaki K.**, Kontos C., Skeparnias I., Apostolidi M., Konstantinidou P., Alexopoulos P., Gioutlakis A., Dougenis D., Drinas D., Moschonas N.K., Scorilas A. and Stathopoulos C. (2015) Monitoring the expression dynamics of networks controlling tRNA expression, signaling and translation in lung cancer. 37<sup>th</sup> Hellenic Society of Biological Sciences Conference Conference, Volos 21-23 May 2015
19. Anastasakis D, Kontos C., **Grafanaki K.** Marchand A., Skeparnias I., Kourmoutou G., Kostopoulou O. N., Alexopoulos P., Dougenis D., Drinas D., Jossinet F., Kalpaxis D.L, Scorilas A. and Stathopoulos C. (2015) The transcriptomic profile of tRNAs, tRFs, miRNAs and their related genes suggests modulation of essential translation factors which promote elevated protein synthesis in Non-Small Cell Lung Cancer. Hellenic Society of Biochemistry and Molecular Biology NEWSLETTER, 61.
20. Skeparnias I., Anastasakis D., Shaukat A-N., **Grafanaki K.**, Kanellou A., Taraviras S., Papachristou D., Papakyriakou A. and Stathopoulos C. (2016) Mammalian PNLDC1 is a novel poly(A) specific exonuclease with discrete expression during early development. Hellenic Society of Biochemistry and Molecular Biology NEWSLETTER, 62.
21. **Grafanaki K.**, Evangelou K., Anastasakis D., Kyriakopoulos G., Symeonidis S., Megas P. and Stathopoulos C. (2016) Molecular and epigenetic crosstalk of networks activating inflammasome in patients with aseptic loosening. Hellenic Society of Biochemistry and Molecular Biology NEWSLETTER, 62.