

# Curriculum Vitae

**Ioanna Katerina Aggeli**

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## QUALIFICATIONS

- 1997 – 2001      Doctorate of Philosophy  
Dept. of Animal & Human Physiology; School of Biology, University of Athens, Greece. Contribution to the study of MAPKs in the cardiac muscle of the amphibian *Rana ridibunda*
- 1992 – 1996      B.Sc. Biology. (7.82, equivalent to 2.1 for British Universities)  
School of Biology, University of Athens, Greece

## EMPLOYMENT HISTORY

- Oct 08-Today      LECTURER. Dept. of Animal & Human Physiology; School of Biology, University of Athens. Subjects: Animal Physiology, Comparative Animal Physiology, Immunology.
- The undergoing study examines the mechanisms involved in the regulation of oxidative stress-induced responses including signal transduction pathways i.e. MMPs.
- Oct 07-Aug 08      TUTOR (P.D. 407) Dept. of Animal & Human Physiology; School of Biology, University of Athens. Subjects: Animal Physiology, Comparative Animal Physiology, Immunology.
- The study performed examines the mechanisms involved in the regulation of alpha-B-crystallin phosphorylation (sHsp22) induced by oxidative stress and calpain inhibition.
- Jan 05-Jun 07      POST DOCTORAL RESEARCH. Supervisor: Prof. Is. Beis. Dept. of Animal & Human Physiology; School of Biology, University of Athens, Greece. “PYTHAGORAS I” {70/3/7399}. “Stress and molecular mechanisms of signal transduction mechanisms in the mammalian heart”.
- The present study investigated the mechanisms involved in the vertebrate cardiac muscle response to oxidative stress induced by reactive oxygen species. Activation of MAPKs, several transcription factors (ATF2, cJun) as well as the transcriptional regulation of HOX-1 were delineated.
- In parallel, studies of the effect of several pharmacological factors on ischemia/reperfusion signaling were performed in the isolated rabbit heart, in collaboration with the research group of Prof. Kremastinos (School of Medicine, University of Athens).
- Dec 01-Nov 04      POST DOCTORAL RESEARCH. Supervisor: Prof. P Sugden.

National Heart and Lung Institute, Department of Cardiac Medicine, Flowers Building, Imperial College of Science, Technology and Medicine, London, UK

*In vivo* the heart is subjected to diverse forms of stress that can lead to apoptosis (programmed cell death) or necrosis. Neonatal cardiac myocytes are terminally differentiated cells, which can be used as an experimental model for studying the various signalling cascades initiated by several forms of stress or hypertrophic stimuli. The regulation of a spectrum of key protein kinases was studied at both the protein and mRNA levels, to help identify the physiological role they play in this physiological setting. These included: p21<sup>CIP/WAF1</sup>, MAPK phosphatases as well as SGK (serum and glucocorticoid-inducible kinase) which are involved in the control of cellular processes as diverse as cell survival, cell cycle, differentiation, cell migration, hypertrophy and hypertension.

Oct 97-Nov 01      PhD RESEARCH. Supervisor: Dr C Gaitanaki.  
Dept. of Animal & Human Physiology; School of Biology, University of Athens, Greece

MAPK signalling pathways are involved in a great variety of cellular processes, transducing signals from the cell membrane to the nucleus. Their role and regulation was studied in the heart of the amphibian *Rana ridibunda*. The physiology of amphibians is fundamentally different to that of mammals, making the study of novel regulation mechanisms intriguing.

Aug 96-Feb 97      SCIENTIFIC VISITOR. Supervisor: Dr. H Dotsika  
Department of Parasitology, Hellenic Pasteur Institute, Athens

### **POSTERS IN SCIENTIFIC MEETINGS**

**1999**, 21<sup>st</sup> Panhellenic Conference E.E.B.E., Syros Island.

**2000**, 22<sup>nd</sup> Panhellenic Conference E.E.B.E., Skiathos Island.

**2000**, 18<sup>th</sup> International Congress of Biochemistry and Molecular Biology, Birmingham, U.K., Abstract No 1546.

**2001**, 23<sup>rd</sup> Panhellenic Conference E.E.B.E., Chios Island.

**2003**, XXVIIIth Symposium on Hormones and Regulation — Protein Kinases in Health & Disease. Mont Sainte Odile, France.

**2004**, 12th International Conference on Second messengers and Phosphoproteins. Montreal, Canada.

**2005**, 30<sup>th</sup> FEBS Congress & 9<sup>th</sup> IUBMB Conference. Budapest, Hungary.

**2005**, 27<sup>th</sup> Panhellenic Conference E.E.B.E. Nafplio.

**2006**, Cell Signaling World. Signal transduction pathways as therapeutic targets. January 25-28, Luxembourg.

**2006**, 28<sup>th</sup> Panhellenic Conference E.E.B.E. Ioannina.

**2006**, 4<sup>th</sup> Panhellenic Congress of Pharmacology, Patra.

**2006**, 5<sup>th</sup> Panhellenic Conference of Free radicals and Oxidative stress Kardamili-Mani.

**2006**, 27<sup>o</sup> Panhellenic Cardiological Congress, Athens.

**2007**, 29<sup>th</sup> Panhellenic Conference E.E.B.E. Kavala.

2007, European Society of Cardiology, Vienna, Abstract No 2159.

2007, 59<sup>th</sup> meeting of the Hellenic Society of Biochemistry & Molecular Biology. Athens.

Apoptosis 2008. From mechanisms to applications. January 23-26 2008, Luxembourg.

2008, XXVIII European Section Meeting of the International Society for Heart Research. Athens, Greece, Abstract No 63.

2008, 33<sup>rd</sup> FEBS Congress & 11<sup>th</sup> IUBMB Conference. Athens, Greece, Abstract No *PP3C-1/116*.

2008, 30<sup>th</sup> Panhellenic Conference E.E.B.E. Thessaloniki.

2009, 31<sup>st</sup> Panhellenic Conference E.E.B.E. Patra.

2009, 60<sup>th</sup> meeting of the Hellenic Society of Biochemistry & Molecular Biology, Athens.

2010, 32<sup>o</sup> Πανελλήνιο Συνέδριο E.E.B.E., Καρπενήσι.

2010, 7<sup>o</sup> Πανελλήνιο Συνέδριο Ελευθέρων ριζών και οξειδωτικού στρες, Σπέτσες.

2010, Frontiers in CardioVascular Biology, European Society for Cardiology, Berlin, Germany, Abstract No BER/0/2040054.

2010, ESC Congress, August 28 - September 1, Stockholm, Sweden, Abstract P641.

## **ORIGINAL PAPERS**

- 1) **Aggeli I.K.**, Gaitanaki C., Lazou A. and Beis I. (2001). Activation of multiple MAPK pathways (ERKs, JNKs, p38-MAPK) by diverse stimuli in the amphibian heart. **Mol. Cell Biochem.** **221 (1-2):63-9.**
- 2) **Aggeli I.K.**, Gaitanaki C., Lazou A. and Beis I. (2001). Stimulation of multiple MAPK pathways by mechanical overload in the perfused amphibian heart. **Am. J. Physiol. Regul. Integr. Comp. Physiol.** **281(5):R1689-98.**
- 3) **Aggeli I.K.**, Gaitanaki C., Lazou A. and Beis I. (2002). Hyperosmotic and thermal stresses activate p38-MAPK in the perfused amphibian heart. **J. Exp. Biol.** **205(Pt 4):443-54.**
- 4) **Aggeli I.K.**, Gaitanaki C., Lazou A. and Beis I. (2002). Alpha(1)- and beta-adrenoceptor stimulation differentially activate p38-MAPK and atrial natriuretic peptide production in the perfused amphibian heart. **J. Exp. Biol.** **205(Pt 16):2387-97.**
- 5) Kemp T.J., **Aggeli I.K.**, Sugden P.H., Clerk A. (2004). Phenylephrine and endothelin-1 upregulate connective tissue growth factor in neonatal rat cardiac myocytes. **J. Mol. Cell. Cardiol.** **37: 603-606.**
- 6) Clerk A., **Aggeli I.K.**, Stathopoulou K. and Sugden P.H. (2006). Peptide growth factors signal differentially through protein kinase C to extracellular signal-regulated kinases in neonatal cardiomyocytes. **Cell signal.** **18 (2): 225-235.**
- 7) Iliodromitis E.K., Gaitanaki C., Lazou A., **Aggeli I.K.**, Gizas V., Bofilis E., Zoga A., Beis Is. And Kremastinos D. (2006). Differential activation of mitogen-activated protein kinases in ischemic and nitroglycerin-induced preconditioning. **Bas. Res. Card.** **101 (4): 327-35.**
- 8) **Aggeli I.K.**, Gaitanaki C. and Beis Is. (2006). Involvement of JNKs and p38-MAPK / MSK1 pathways in H<sub>2</sub>O<sub>2</sub>-induced upregulation of heme oxygenase-1 mRNA in H9c2 cells. **Cell Signal.** **18 (10) 1801-12**
- 9) Andeadou I., Iliodromitis E., Tsovolas K., **Aggeli I.K.**, Zoga A., Gaitanaki C., Paraskevaidis I., Beis Is and Kremastinos D. (2006). Acute administration of vitamin E triggers

preconditioning via  $K_{ATP}$  channels and cyclic-GMP without inhibiting lipid peroxidation. **Free Rad. Biol. Med.** **41 (7)** 1092-99.

- 10) Gaitanaki C., Kalpachidou Th., **Aggeli I.K.S.** and Beis I. (2007). Effects of  $CoCl_2$  on p38-MAPK signalling pathway in the perfused amphibian (*Rana ridibunda*) heart. **J. Exp. Biol.** **210(Pt 13):2267-2277.**
- 11) Iliodromitis E., **Aggeli I.K.**, Gaitanaki C., Tsiafoutis I., Zoga A., Beis Is and Kremastinos D. (2007). p38-MAPK is involved in restoration of the lost protection of preconditioning by nicorandil *in vivo*.**Eur. J. Pharmacol.** **579 (1-3):289-297**
- 12) **Aggeli I.K.**, Gaitanaki C. and Beis Is. (2008). Oxidative stress and calpain inhibition induce alpha B-crystallin phosphorylation via p38-MAPK and calcium signalling pathways in H9c2 cells. **Cell. Signal.** **20 (7): 1292-1302.**
- 13) Gaitanaki C., Matri M., **Aggeli I.K.S.** and Beis Is. (2008). Differential roles of p38-MAPK and JNKs in mediating early protection or apoptosis in the hyperthermic perfused amphibian heart. **J. Exp. Biol.** **211 (Pt 15): 2524-2532.**
- 14) **Aggeli IK**, Beis I, Gaitanaki C. (2009). ERKs and JNKs mediate hydrogen peroxide-induced Egr-1 expression and nuclear accumulation in H9c2 cells. Physiol Res. 2009 Aug 12. [Epub ahead of print]
- 15) Gourgou E, **Aggeli IK**, Beis I, Gaitanaki C. (2010). Hyperthermia-induced Hsp70 and MT20 transcriptional upregulation are mediated by p38-MAPK and JNKs in *Mytilus galloprovincialis* (Lamarck); a pro-survival response. **J. Exp. Biol.** **213 (Pt 2): 347-357.**
- 16) **Aggeli IK**, Kefaloyianni, E., Beis I, Gaitanaki C. (2010). HOX-1 and COX-2: Two differentially regulated key mediators of skeletal myoblast tolerance under oxidative stress. **Free Radic Res.** **44 (6): 679-93.**

## **BOOK**

Beis Is., Gaitanaki C. and Marmari A. (2007). ENVIRONMENTAL ANIMAL PHYSIOLOGY (1<sup>ST</sup> VOLUME): Comparative Physiology (P. Willmer, G. Stone and I. Johnston), Translation of 6<sup>th</sup> Chapter : «Metabolism and energy supply», pages: 139-169.