

Konstantinos Poulas, Ph.D, Biochemistry and Molecular Biology

Associate Professor of Biochemistry, Department of Pharmacy, University of Patras, Greece.

Research interests:

Autoimmunity

Myasthenia gravis

Gene expression

Protein characterization

Protein crystallization

Wound healing

Electroceuticals

He works with various methodologies in order to trace/identify/explore the binding sites of substrates to proteins and to map interaction interfaces. He has long lasting experience in myasthenia gravis pathogenesis and diagnosis. The last three years he is also working with a new scientific area, called ELECTROCEUTICALS. He is studying the effect of WMCS technology on wound healing and burns. He has about 50 publications in peer reviewed journals and he is currently participating in FP7 and national projects.



CURRICULUM VITAE

SURNAME: POULAS
NAME: KONSTANTINOS
DATE OF BIRTH: 29 JANUARY 1970
PLACE OF BIRTH: CHAIDARI, ATHENS, GREECE
NATIONALITY: GREEK
SEX: MALE
WORK ADDRESS: UNIVERSITY OF PATRAS,
DEPARTMENT OF PHARMACY,
RIO, PATRAS, GREECE
TELEPHONE: OFFICE: +30 2610 963253
LABORATORY: +30 2610 963254
MOBILE: +30 6937 333722
E-MAIL ADDRESS: kpoulas@upatras.gr

ACADEMIC POSITIONS:

6/2014 – Today: Elected as Associate Professor of Biochemistry, Pharmacy Dept., University of Patras
7/2009 – Today: Assistant Professor of Biochemistry, Pharmacy Dept., University of Patras
8/2003 – 7/2009: Lecturer of Biochemistry, Pharmacy Dept., University of Patras
2/2002 – 8/2003: Postdoctoral Researcher, Biochemistry Dept., Hellenic Pasteur Institute.

EDUCATION:

- 1994 - 2001: PhD in Biochemistry, School of Biology, Kapodistrian University of Athens, Athens, GREECE.
- 1995 - Today: Graduate student in School of Medicine, Kapodistrian University of Athens, Athens, GREECE.
- 1993: BSc in Biology, School of Biology, Kapodistrian University of Athens, Athens, GREECE.

PUBLICATIONS

- A49 Kambouris M, Zagoriti Z, Lagoumintzis G, **Poulas K**. From therapeutic Electrotherapy to Electroceuticals: Formats, Applications and Prospects of Electrostimulation. *Annual Research and Review in Biology* 2014, 4(20):3054-70.
- A48 Kouvatsos N, Niarchos A, Zisimopoulou P, Eliopoulos E, **Poulas K**, Tzartos S. Purification and functional characterization of a truncated human $\alpha 4\beta 2$ nicotinic acetylcholine receptor. *Int J Biol Macromol*. 2014 Jul 8;70C:320-326.
- A47 Lagoumintzis G, Zisimopoulou P, Trakas N, Grapsa E, **Poulas K**, Tzartos SJ. Scale up and safety parameters of antigen specific immunoabsorption of human anti-acetylcholine receptor antibodies. *J Neuroimmunol*. 2014 Feb 15;267(1-2):1-6.
- A46 Niarchos A, Zouridakis M, Douris V, Georgostathi A, Kalamida D, Sotiriadis A, **Poulas K**, Iatrou K, Tzartos SJ. Expression of a Highly Antigenic and Native-Like Folded Extracellular Domain of the Human $\alpha 1$ Subunit of Muscle Nicotinic Acetylcholine Receptor, Suitable for Use in Antigen Specific Therapies for Myasthenia Gravis. *PLoS One*. 2013 Dec 20;8(12):e84791. doi: 10.1371/journal.pone.0084791. eCollection 2013.
- A45 Zagoriti Z, Kambouris ME, Patrinos GP, Tzartos SJ, **Poulas K**. Recent advances in genetic predisposition of myasthenia gravis. *Biomed Res Int*. 2013;2013:404053. doi: 10.1155/2013/404053. Epub 2013 Nov 5. Review.
- A44 Papadopoulos P, Viennas E, Gkantouna V, Pavlidis C, Bartsakoulia M, Ioannou ZM, Ratbi I, Sefiani A, Tsaknakis J, **Poulas K**, Tzimas G, Patrinos GP. Developments in FINDbase worldwide database for clinically relevant genomic variation allele frequencies. *Nucleic Acids Res*. 2014 Jan 1;42(1):D1020-6.
- A43 Canan Ulusoy; Eunmi Kim; Ruksana Huda; Vuslat Yilmaz; **Konstantinos Poulas**; Nikos Trakas; Lamprini Skriapa; Athanasios Niarchos; Richard T Strait; Fred D Finkelman; Selin Turan; Paraskevi Zisimopoulou; Socrates Tzartos; Güher Saruhan-Direskeneli; Premkumar Christadoss. Preferential production of IgG1, IL-4 and IL-10 in MuSK-immunized mice. *Clinical Immunology*. Accepted
- A42 Avidan, Nili; Le Panse, Rozen; Harbo, Hanne; Bernasconi, Pia; **Poulas, Konstantinos**; Ginzburg, Elizabeta; Cavalcante, Paola; Colleoni, Lara; Baggi, Fulvio; Antozzi, Carlo; Truffault, Frederique; Horn-Saban, Shirley; Pöschel, Simone; Zagoriti, Zoi; Maniaol, Angelina; Lie, Benedicte; Bernard, Isabelle; Saoudi, Abdelhadi; Illes, Zsolt; Casasnovas, Carlos; Melms, Arthur; Tzartos, Socrates;

Willcox, Nick; Kostera-Pruszczyk, Anna; Tallaksen, Chantal; Mantegazza, Renato; BERRIH-AKNIN, Sonia; Miller, Ariel, "VAV1 and BAFF, via NFκB pathway, are genetic risk factors for Myasthenia Gravis" *Annals of Clinical and Translational Neurology*. Accepted

- A41 Tafrali C, Paizi A, Borg J, Radmilovic M, Bartsakoulia M, Giannopoulou E, Giannakopoulou O, Stojiljkovic-Petrovic M, Zukic B, **Poulas K**, Stavrou EF, Lambropoulou P, Kourakli A, Felice AE, Papachatzopoulou A, Philipsen S, Pavlovic S, Georgitsi M, Patrinos GP. (2013). Genomic variation in the MAP3K5 gene is associated with β-thalassemia disease severity and hydroxyurea treatment efficacy, *Pharmacogenomics*; 14(5):469-83.
- A40 Castana O, Dimitrouli A, Argyrakos T, Theodorakopoulou E, Stampolidis N, Papadopoulos E, Pallantzas A, Stasinopoulos I and **Poulas K**. (2013). Wireless Electrical Stimulation: An Innovative Powerful Tool for the Treatment of a Complicated Chronic Ulcer, *The International Journal of Lower Extremity Wounds*; 12:18-21.
- A39. Ramadhinara A, **Poulas K**. (2013). Use of wireless microcurrent stimulation for the treatment of diabetes-related wounds: 2 case reports, *Adv Skin Wound Care*; 26(1):1-4.
- A38. Lazaridis K, Zisimopoulou P, Lagoumintzis G, Skriapa L, Trakas N, Evangelakou P, Kanelopoulos I, Grapsa E, **Poulas K**, Tzartos S. (2012). Antigen-specific apheresis of autoantibodies in myasthenia gravis, *Ann N Y Acad Sci*; 1275(1):7-12.
- A37 Giannopoulou E, Bartsakoulia M, Tafrali C, Kourakli A, **Poulas K**, Stavrou EF, Papachatzopoulou A, Georgitsi M, Patrinos GP. (2012). A single nucleotide polymorphism in the HBBP1 gene in the human β-globin locus is associated with a mild β-thalassemia disease phenotype, *Hemoglobin*; 36(5):433-45.
- A36 Zagoriti Z, Georgitsi M, Giannakopoulou O, Ntellos F, Tzartos SJ, Patrinos GP, **Poulas K**. (2012). Genetics of myasthenia gravis: a case-control association study in the Hellenic population, *Clin Dev Immunol*; 48:491-9.
- A35 **Poulas K**, Katsouraki E, Kordas G, Kokla A, Tzartos SJ. (2012). Anti-MuSK- and anti-AChR-positive myasthenia gravis induced by D-penicillamine, *Journal of Neuroimmunology*; 250(1-2):94-8
- A34 Viennas E, Gkantouna V, Ioannou M, Georgitsi M, Rigou M, **Poulas K**, Patrinos GP, Tzimas GE. (2012). Population-Ethnic Group Specific Genome Variation Allele Frequency Data: A Querying and Visualization Journey, *Genomics*; 100:93-101
- A33 Pavlidis C, Karamitri A, Barakou A, Cooper DN, **Poulas K**, Topouzis S & Patrinos GP. (2011). Ascertainment and critical assessment of the views of the general public and healthcare professionals on nutrigenomics in Greece, *Personalized Medicine*; 9(2):201-10.

- A32 Dimitropoulos N, Papakyriakou A, Dalkas G, Chasapis C, **Poulas K** and Spyroulias G. (2011). A computational investigation on the role of glycosylation in the binding of alpha1 nicotinic acetylcholine receptor with two alpha-neurotoxins. *Proteins*; 79:142-152.
- A31 Sagia A, Cooper DN, **Poulas K**, Stathakopoulos V, Patrinos GP. (2011). Critical appraisal of the private genetic and pharmacogenomic testing environment in Greece. *Personalized Medicine*; 8(4):413-420.
- A30 Mai Y, Koromila T, Sagia A, Cooper DN, Vlachopoulos G, Lagoumintzis G, Kollia P, **Poulas K**, Stathakopoulos V, Patrinos GP. (2011). A critical view of the general public's awareness and physicians' opinion of the trends and potential pitfalls of genetic testing in Greece, *Personalized Medicine*; 8(5):551-61
- A29 Georgitsi M, Viennas E, Gkantouna V, Christodouloupoulou E, Zagoriti Z, Tafrali C, Ntellos F, Giannakopoulou O, Boulakou A, Vlahopoulou P, Kyriacou E, Tsaknakis J, Tsakalidis A, **Poulas K**, Tzimas G, Patrinos GP. (2010). Population-specific documentation of pharmacogenomic markers allelic frequencies in the Frequency of INherited Disorders database. *Pharmacogenomics*; 12(1):49-58.
- A28 Georgitsi M, Viennas E, Gkantouna V, van Baal S, Petricoin EF, **Poulas K**, Tzimas G, Patrinos GP. (2010). FINDbase: A worldwide database for genetic variation allele frequencies updated, *Nucleic Acids Research*; 39(Database issue):D926-32
- A27 van Baal S, Zlotogora J, Lagoumintzis G, Gkantouna V, Tzimas I, **Poulas K**, Tsakalidis A, Romeo G, Patrinos GP. (2010). ETHNOS: A versatile electronic tool for the development and curation of national genetic databases, *Hum Genomics*; 4(5):361-8.
- A26 Lagoumintzis G, **Poulas K**, Patrinos GP. (2010). Genetic databases and their potential in pharmacogenomics, *Curr Pharm Des*; 16(20):2224-31.
- A25 Lagoumintzis G, Zisimopoulou P, Kordas G, Lazaridis K, **Poulas K**, Tzartos SJ. (2010). Recent approaches to the development of antigen-specific immunotherapies for myasthenia gravis, *Autoimmunity*; 43(5-6):436-45.
- A24 Tsiamalos P, Kordas G, Kokla A, **Poulas K**, Tzartos SJ. (2009). MuSK Myasthenia gravis in Greece, *European Journal of Neurology*; 16:925-30.
- A23 Zouridakis M, Zisimopoulou P, Eliopoulos E, **Poulas K**, Tzartos SJ. (2009). Design and expression of human $\alpha 7$ nicotinic acetylcholine receptor extracellular domain mutants with enhanced solubility and ligand-binding properties. *Biochim Biophys Acta*; 1794:355-66.
- A22 Zouridakis M, Zisimopoulou P, **Poulas K**, Tzartos SJ. (2009). Recent advances in understanding the structure of nicotinic acetylcholine receptors, *IUBMB Life*; 61:407-23.
- A21 Bitzopoulou K, Kostelidou K, **Poulas K**, Tzartos SJ. (2008). Mutant forms of the extracellular domain of the human acetylcholine receptor gamma-subunit with

improved solubility and enhanced antigenicity. The importance of the Cys-loop, *BBA - Proteins and Proteomics*; 1784:1226-33.

- A20 Tzartos SJ, Bitzopoulou K, Gavra I, Kordas G, Jacobson L, Kostelidou K, Lagoumintzis G, Lazos O, **Poulas K**, Sideris S, Sotiriadis A, Trakas N, Zisimopoulou P. (2008). Antigen-specific apheresis of pathogenic autoantibodies from myasthenia gravis sera, *Ann. N.Y Acad. Sci*; 1132:291-9.
- A19 Zisimopoulou P, Lagoumintzis G, **Poulas K**, Tzartos SJ. (2008). Antigen specific apheresis of human anti-acetylcholine receptor autoantibodies from myasthenia gravis patients' sera using *Escherichia coli*-expressed receptor domains. *J. Neuroimmunol*; 200:133-41
- A18 Zisimopoulou P, Lagoumintzis G, Kostelidou K, Bitzopoulou K, Kordas G, Trakas N, **Poulas K**, Tzartos SJ. (2008). Towards antigen-specific apheresis of pathogenic autoantibodies from myasthenic patients as a further step to plasmapheresis treatment. *J. Neuroimmunol*; 201-202:95-103.
- A17 Konstantakaki M, Tzartos SJ, **Poulas K**, and Eliopoulos E. (2008). Model of the extracellular domain of the human alpha7 nAChR based on the crystal structure of the mouse alpha 1 nAChR extracellular domain; *Journal of Molecular Graphics and Modelling*, 26, 1333-37.
- A16 Kalamida D, **Poulas K**, Avramopoulou V, Fostieri E, Lagoumintzis G, Lazaridis K, Sideri A and Tzartos S. (2007). Muscle and Neuronal Nicotinic Acetylcholine Receptors: Structure, Function and Pathogenicity. *FEBS Journal*, 274 3799–3845.
- A15 Zouridakis M, Zisimopoulou P, Eliopoulos E, Jacobson L, **Poulas K** and Tzartos SJ. (2007). Recombinant extracellular domains of human neuronal nicotinic receptors: Preliminary studies on mutant forms for the improvement of solubility. *Neurophysiology*, 39(4/5): 259-63.
- A14 Sideris S, Lagoumintzis G, Kordas G, Kostelidou K, Sotiriadis A, **Poulas K** and Tzartos SJ. (2007). Isolation and functional characterization of anti-acetylcholine receptor subunit-specific autoantibodies from myasthenic patients: receptor loss in cell culture, *J. Neuroimmunol*; 189:111-7.
- A13. Zouridakis M, Kostelidou K, Sotiriadis A, Stergiou C, Eliopoulos E, **Poulas K** and Tzartos S. (2007). Circular Dichroism Studies of Recombinant Extracellular Domains of Human Muscle and Neuronal Nicotinic Acetylcholine Receptors Provide an Insight into their structure. *Intl. J. Biol. Macromol*; 41:423-9.
- A12. Konstantakaki M, Tzartos SJ, **Poulas K**, and Eliopoulos E. (2007). Molecular modeling of the complex between Torpedo acetylcholine receptor and anti-MIR Fab198. *Biochem. Biophys. Res. Commun*; 356:569-75.
- A11 Fostieri E, Kostelidou K, **Poulas K** and Tzartos SJ. (2006). Recent advances in the understanding and therapy of myasthenia gravis, *Future Neurology*; 1(5), 799-817.

- A10 Tataridis D, Kolocouris A, Fytas G, Kolocouris N, Foscolos GB, **Poulas K** and Tzartos SJ. (2002). Mounting the nicotinic pharmacophoric structural elements in an homoadamantane scaffold: Synthesis, molecular modeling and binding affinities to $\alpha 7$ nicotinic acetylcholine receptors, *Il Farmaco*; 57, 979-84.
- A9 Campos E, Schiavi C, Bolognesi A, Lubelli C, Polito L, Bellusci C, Vismara S, **Poulas K**, Tzartos SJ and Stirpe F. (2002). Selective lesions of rabbit extraocular muscles injected with the anti-AChR immunotoxin saporin-mAb73, *Current Eye Research*; 24(1):58-65.
- A8. **Poulas K**, Eliopoulos E, Vatzaki E, Navaza J, Kontou M, Oikonomakos N, Acharya KR and Tzartos SJ. (2001). Crystal structure of Fab198, an efficient protector of acetylcholine receptor against myasthenogenic antibodies, *European Journal of Biochemistry*; 268, 3685-3693.
- A7 **Poulas K**, Tsibri E, Kokla A, Papanastasiou D, Tsouloufis T, Marinou M, Tsantili P, Papapetropoulos T and Tzartos SJ. (2001). Epidemiology of seropositive myasthenia gravis in Greece, *Journal of Neurology, Neurosurgery and Psychiatry*; 71(3):352-356.
- A6 **Poulas K** and Tzartos SJ. (2001). The 'gender gap' in autoimmune diseases, *The Lancet*; 357(9251):234.
- A5 **Poulas K**, Tsibri E, Papanastasiou D, Tsouloufis T, Marinou M, Tsantili P, Papapetropoulos T and Tzartos SJ. (2000). Equal male and female incidence of myasthenia gravis; *Neurology*, 54(5):1202-1203.
- A4 Papanastasiou D, **Poulas K**, Kokla A and Tzartos SJ. (2000). Prevention of passively transferred experimental autoimmune myasthenia gravis by fragments of monoclonal antibodies directed against the main immunogenic region of the acetylcholine receptor, *J. Neuroimmunol*; 104(2):124-132.
- A3 **Poulas K**, Tsouloufis T and Tzartos SJ. (2000). Treatment of passively transferred experimental autoimmune myasthenia gravis using papain, *Clinical and Experimental Immunology*; 120:363-368.
- A2 Papanastasiou D, Mamalaki A, Eliopoulos E, **Poulas K**, Liolitsas C and Tzartos SJ. (1999). Construction and characterization of a humanized single chain Fv antibody fragment against the main immunogenic region of the acetylcholine receptor, *J. Neuroimmunol*; 94:182-195.
- A1 De La Porte S, Chaubourt E, Fabre F, **Poulas K**, Chapron J, Eymard B, Tzartos SJ and Koenig J. (1998). Accumulation of acetylcholine receptor is a necessary condition for normal accumulation of acetylcholinesterase during in vitro neuromuscular synaptogenesis, *European Journal of Neuroscience*; 10:1631-1643.

DBLP CITED PUBLICATIONS

Haidinis V, Dalkas G, **Poulas K**, Spyroulias G (2012) Molecular Modeling and Conformational Analysis of MuSK Protein. AIAI (2) 2012: 642-650

Gkantouna V, Ioannou ZM, Tsakalidis A, Viennas E, **Poulas K**, Tsaknakis J, Tzimas J. (2012). Towards an era of epidemiological databases for autoimmune diseases. BIBE 2012: 69-73

Antoniou DI, Georgitsi M.A, Gkantouna V.A, Patrinos G.P, **Poulas K**, Tsakalidis AK, Tzimas G.E, Viennas E.S. (2010). dAUTObase: Mining gems on autoimmune diseases utilizing web visualization technologies ITAB 2010, 1-5

Projects supported

General Secretariat for Research

Thales: «Autoimmunity»

2012 – 2015, 600000 Euros, Coordinator (Collaboration with Medical Schools of Athens and Larisa)

Hellas - Turkey: «MuSK Myasthenia gravis»

2011 – 2013, 15000 Euros, Coordinator

Ministry of education

«**PITHAGORAS**» Structural studies of recombinant extracellular domains of AChR

2004-2006 65.000 € (In collaboration with S. Tzartos and G. Spyroulias)

Ministry of Employment

EQUAL II: Development of a distance learning platform for people suffering from myasthenia gravis

2005 – 2007 170000 € (Scientific Responsible)

University of Patras

Project «Karatheodoris»: Structural studies of AChR

2005 - 2007 25000 € (Scientific Responsible)

Other

MDA-Hellas. Myasthenia gravis studies

European Union

FP7 Researchers' Night 2013

The Greek events, 2013 14.000 € Principal Investigator

FP7, REGPOT – SEE-DRUG, Principal Investigator

FP7 Researchers' Night 2011

The Greek events, 2011 12.000 € Principal Investigator

FP7 Researchers' Night 2010

The Greek events, 2010 12.000 € Principal Investigator

FP7 Researchers' Night 2008

The Greek events, 2008 28.000 € Principal Investigator

FP7 Researcher's Night 2007

The Greek events, 2007 28.000 € Principal Investigator

LLP Leonardo: Wings2Fly: Innovative interventions for disadvantaged

2007-2008 18.000 € Principal Investigator

AWARDS

1^o Archimedes Award, EC, 44.000 Euros.

“Sotiris Papastamatis” Award, during the 24th Panhellenic Medical Congress