CURRICULUM VITAE OF IMRE LENGYEL
9/12/2009

CURRENT POSITIONS: Senior Research Fellow,
Department of Ocular Biology and Therapeutics,
UCL Institute of Ophthalmology,
Honorary Research Fellow, Moorfields Eye Hospital

CONTACT DETAILS 11-43 Bath Street, London, EC1V 9EL, UK
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DEGREES HELD: PhD in Medicinal Chemistry, Albert Szent-Györgyi Medical School, University of Szeged, Hungary (1996)
Univ. Dr. Albert Szent-Györgyi Medical School, University of Szeged, Hungary (1992)
MSc in Biophysics, Attila József University, Szeged, Hungary (1989)
BSc in Physics, Attila József University, Szeged, Hungary (1987)
Diploma in professional photography, 607 Collage, Kecskemet, Hungary (1983)

BIRTH: 30.08.1963. Mezõtúr, Hungary

GENDER: Male

NATIONALITY: Hungarian and Australian dual citizen

ACADEMIC HISTORY

2006 Senior Research Fellow
Institute of Ophthalmology, University College London, UK
Research Topic: The role of zinc in age-related macular degeneration

2004 January to present Honorary Research Fellow
Department of Research and Development, Moorfields Eye Hospital, NHS
Research Topic: The role of trace elements in retinal diseases

2003 -2005 Honorary Research Fellow
Institute of Ophthalmology, University College London, UK
Research Topic: The molecular basis for deposit formation in age related macular degeneration

1998 September-2005
Department of Biochemistry, Biological Research Center, Szeged, Hungary
Research Topics: Signal transduction in normal and pathological brain.

1998 January-1998 August Senior Postdoctoral Fellow
The Neuroscience Group, Faculty of Medicine, University of Newcastle, Australia
Research Topics: Molecular changes that regulate efficiency of synaptic transmission in the hippocampus.

1992 July-1997 December Postdoctoral Fellow
The Neuroscience Group, Faculty of Medicine, University of Newcastle, Australia
Research Topics: Role of protein phosphorylation in synaptic plasticity.

1991 May-1992 May Scientific Consultant

FIDIA Research Laboratory, Abano Terme, Italy
Research Topics: Age related changes in the phosphorylation states of CaMPK-II in cerebral endothelial cells. The role of zinc induced activation.

1989 August-1992 May Doctor of University Student
Albert Szent-Györgyi Medical University, Szeged, Hungary. Supervisors: Prof. B. Penke and Prof. F. Joó
Thesis title: Phosphorylation of CaMPK-II in brain capillary endothelial cells: The effects of Na-fluoride and synthetic peptides

1987 September-1989 June MSc in Biophysics
József Attila University of Science, Szeged, Hungary, Supervisor: Dr. Z. Oláh
Thesis title: Phosphorylation of CaMPK-II: A kinetic model based on the multimeric structure of the rat brain kinase.

1984 September-1987 June BSc Student
József Attila University of Science, Szeged, Hungary

1981 September-1983 June Diploma in Professional Photography
607 College of Kecskemet, Hungary

1977 September-1981 June High School Certificate
Biology Special Class, Julia Banyai High School, Kecskemet, Hungary

AWARDS

2008 Bill Brown Charitable Trust Senior Research Fellow
2007 Poster Prize (Anatomy and Cell Biology Section) European Association for Vision and Eye Research
2002 Royal Society European Science Exchange Program Visiting Fellowship (1 month in Prof. T.V.P. Bliss' laboratory, NIMR, Mill Hill, London)
2002 IBRO Travel Award to attend the 32nd Meeting for the Society for Neuroscience
2001 Eötvös Fellow, Hungarian State Fellowship Board (6 months fellowship in Prof. T.V.P. Bliss' laboratory, NIMR, Mill Hill, London)
1999 János Bolyai Fellow, Hungarian Academy of Sciences
1995 Charles G Goddard Research Award (National Heart Foundation, for the highest ranking research grant application in 1995) Shared with M.R. Bennett and J.A.P Rostas
1991/1993/1995/2001 ISN Travel Award to attend the Biennial meeting of ISN
1989 Hungarian Academy of Science Doctoral Fellowship

APPOINTMENTS

2009 to present	Ad hoc reviewer for Investigate Ophthalmology and Vis. Science
2005 to present	Ad hoc reviewer for Journal of Neuroscience Methods
2005 to present	Ad hoc reviewer for FEBS letters
2004 to present	Ad hoc reviewer for Neurotoxicology
2004 to present	Ad hoc reviewer for Life Sciences
2004 to present	Ad hoc reviewer for Bioorganic and Medicinal Chemistry Letters
2003 to present	Member of the Scientific Advisory Council, The Institute of Neuroscience and Biomedical Research, Imo State University, Owerri, Nigeria
2002 June	External examiner, PhD student Roberta Fajka-Boja (Supervisor: Dr Éva Monostory), University of Szeged, Szeged, Hungary
1997-1998	Coordinator of the Neuroscience Seminar Program, University of Newcastle, Callaghan, Australia
1996 to present	Ad hoc reviewer for Journal of Neurochemistry

MEMBERSHIP OF LEARNED SOCIETIES

2008 to present	Member of the Royal Society of Medicine
2004 to present	Association for Research in Vision and Ophthalmology
1989 to present	International Society for Neurochemistry
1989 to present	International Brain Research Organization
1999 to present	Federation of European Neuroscience Societies
1998 to present	Federation of European Biochemical Societies
1993-1998	Australian Neuroscience Society
1991-1994	Institute of Developmental Neuroscience & Ageing; Young Scientist Board

MEETING ORGANIZATION

Dec 2009	Organizer of the session "Zinc in retina function", Society for Zinc Biology, Jerusalem, Israel
May 2008	Organizer of the session "Zinc in retinal degeneration", Zinc Signals 2008, Houston, TX, USA
May 2008	Organizer of Special Interest Group "Trace metal based therapy for AMD", ARVO, Fort Lauderdale, USA
October 2006	Special Interest Symposium on "Use of micronutrients" at the European Association for Vision and Eye Research
Nov 2005	Organizer of the session "Zinc in retinal degeneration", Zinc Signals 2005, Galveston, TX, USA
June 2004	Organizer of the session "Zinc ion in the visual system", Zinc Signals 2004, Aarhus, Denmark
May 2003	Organizer of the session "Zinc in Alzheimer's disease", Zinc Signals 2003, Grand Cayman Island
April 2003	Member of the Organizing Committee for the 6th Biennial Conference of the Society for Neuroscientist of Africa, Abuja, Nigeria; Organizer of the session "Molecular changes in synaptic plasticity".
January 2003	Organizer of plenary lecture: "Neurobiology of zinc" by C. Frederickson at the Hungarian Society for Neuroscience, Balatonfüred, Hungary
January 1996	Symposium organizer: "New developments in opioid research" Australian Neuroscience Society Meeting (co-chair Loris Chahl)

COMPETITIVE RESEARCH GRANTS

Bill Brown Charitable Trust Senior Research Fellowship
Zinc and Age Related Macular Degeneration (2008-2012) £400,000
Mercer Fund, Fight for Sight, UK
New methodologies to study zinc transporters in the RPE (2009-2011) £30,000
The Henry Smith Charity, PhD studentship
Zinc homeostasis and the normal and pathological ageing of the retina (2009-2012) £78,300
Biomedical Research Centre Large Grant
The establishment of an eye depository. PI: Professor PJ Luthert (2009-2010) £114,000
Special Trustees, Moorfields Eye Hospital

The association between age-related macular degeneration and Alzheimer's disease, a clinical study. PI: Tunde Peto MD, PhD (2009) £58,000

Medical Research Council Project Grant

Qualifying mouse models of spontaneous, progressive age-related macular degeneration PI Professor David Shima (2008-2010) £440,000

Special Trustees, Moorfields Eye Hospital, PhD studentship

Zinc regulation and deregulation: Zinc transporters are key to understanding the events leading to age-related macular degeneration (2008-2011) £17,301

MRC Dorothy Hodgkin Postgraduate Award and Mercer Fund

PhD Studentship; Zinc regulation and deregulation: Zinc transporters are key to understand the events leading to AMD (2008-2011) £99,000

Medical Research Council Centre Grant

CRUCIBLE, an interdisciplinary research centre on ageing (grant number G0700729) PI Professor Nick Tyler (2008-2012) £3.4 Million

Special Trustees, Moorfields Eye Hospital

The effects of zinc supplementation on retinal gene expression, protein distribution and morphology (2008-2009) £14,500

Special Trustees, Moorfields Eye Hospital

Zinc and Age Related Macular Degeneration (2006-2007) £51,000

Mercer Fund, Fight for Sight, UK

Characterisation of drusen deposition in the aging eye (2004-2007) £108,500

U.S. Hungarian Mobility Research Grant

Does zinc mediated activity changes of CaMPK-II affect LTP?
Joint with C. Frederickson, UTMB, Galveston, USA (2002) US$4,000

National Science and Development Program (NKFP), Hungary

Signal transduction mechanisms in Alzheimer's disease. No:1/040/2001. **(**2001-2003) US$43,000

National Science Foundation (OTKA), Hungary

1) The cellular basis of antinociception and dependence; complex examination between cannabinoid and opioid system.
PI: A. Borsodi (2000-2003) US$25,000
2) Biochemical characterisation of the effects of endogenous opioids
PI: S. Benyhe (2001-2003) US$30,000
3) The role of free zinc in the CaMPK-II modulated neuronal processes, T/F 037911 (2002-2005) US$25,000

Scientific Committee of Health Ministry of Hungary (ETT)

The role of neuropeptide FF and opiate receptors in drug addiction: a biochemical and behavioural study.
PI: S. Benyhe (2000) US$4,500

Committee in Aid for Neurochemistry, International Society for Neurochemistry

Presynaptic mechanisms underlying mossy fiber LTP in rat hippocampus. (1999) US$3,000

Australian Research Council

Molecular mechanisms underlying presynaptic long-term potentiation in hippocampal synaptosomes.
PI: J.A.P. Rostas (1997) AU$10,000

National Heart Foundation

Mechanism of secretion in autonomic ganglia and its modulation by nitric oxide.
PI: M.R. Bennett (1996-1997) AU$88,000

Research Management Committee, **University of Newcastle**

Establishment of techniques for preparing genetically engineered molecules to study the regulation of neuronal and cellular function.
PI: P.R. Dunkley (1996) AU$12,000

TEACHING EXPERIENCE:

2008- ongoing Lecturing on the MSc Neuroscience Course, UCL, UK

2000 Special colloquium on recent ideas on post-translational modification, University of Szeged, Hungary

1996-1998 Lecture series, University of Newcastle, Australia:
Protein synthesis and sorting, Molecular basis of cell motility (Biol 204);
Laboratory practical classes, University of Newcastle, Australia:
Program coordinator for Biochemistry practical classes (Biol 208);
Tutor for Psychology students Molecular basis of synaptic transmission (Psych 309),

Undergraduate, Graduate and Postgraduate Research Students:

2009-2012 Ashraf Gango (PhD student). Secondary supervisor

2009-2012 Neda Barzegar-Befroei (PhD student). Principle supervisor

2008-2011 Sabrina Cahyadi (PhD student). Principle supervisor

2000-2004 Zsolt Molnar (PhD student). Principle supervisor; Obtained his PhD and is currently a postdoctoral fellow.

2003-2004 Nkechi Onwochei (BSc student) Principle supervisor; Special prize for highest mark for a BSc student in the year. Now a medical doctor

2002-2003 Rachel Thomas (MBBS student). Co-supervisor, Now a medical doctor.

2001-2003 Peter Kovacs (MSc student) Principle supervisor; 3rd prize of the National Science Student Competition in 2003 for research. Currently a PhD student at the University of Szeged, Hungary.

1999-2000 Rajiv Dixit (ITC Fellow). Principle supervisor; Obtained his PhD at the Cancer Institute, Tirupati, India.

1998 Alison Sievert (Honours, 1st class degree) Co-supervisor

1997 Rebecca Lim (Honours, 1st class degree). Co-supervisor, Obtained a PhD and is currently is a postdoctoral fellow at the University of Newcastle, Austrlia.

1997 Lene Elsnab Olesen (MSc student). Principle supervisor, Obtained her PhD at Medical Research Council, Cambridge, UK.

1996-1999 Jing Xue (PhD student). Co-supervisor,Obtained her PhD and now a postdoctoral fellow at the Children's Medical Research Institute, Sydney, Australia.

Courses Attended:

13/07-14/07/2009 Leadership for Aspiring Principal Investigators

22/06-23/06/2009 Research Staff Conference

27/05/2009 Recruitment and Selection Refresher

18/05/2009 L7 Building Successful Partnerships (UCL Leadership Programme)

05/11/2008	Feedback to Students
31/10/2008	Effective Res Student Supervision at UCL
31/03- 01/04/2008	Finance Value Creation Workshop provided by London Business School
14/01- 11/03/2008	E-Challenge provided by UCL Advances
19/04/2007	LMRT Module: Handling Interpersonal Issues
14/02/2007	Diversity in the Workplace
13-14/12/2006 and 06/03/2007	Career and Professional Dev for Researchers
15/12/2006	CROS 2006 provided by UCL
29/11/2006	LMRT Mod: Managing Individual Performance Career and Professional Dev for Researchers
10/05/2006	LMRT Module: Planning a Research Project
05/04/2006	LMRT Module: Selecting Staff
13/03/2006	Safety Induction
01/03/2006	LMRT Module: Leadership & Team Building
2001	Two-day course on “Ethical issues in research”. MRC, Mill Hill
2000	One week long update in radiation use and safety including how to supervise students working with radioactive material. University of Szeged, Hungary
1997	One week long training on “How to be a supervisor”. University of Newcastle, Callaghan, Australia
1995	International Society for Neurochemistry Summer School on Calcium Signalling, Montpellier, France
1994	A 3 day corse on “Foundations for tertiary Teaching”. University of Newcastle, Callaghan, Australia
1992	One week long course on “Writing a Research Paper” University of Newcastle, Callaghan, Australia
1990	Certificate in radiation use and safety. Szeged, Hungary

REFEREED FULL LENGHTH PUBLICATIONS

Sallo, F.B., Bereczki E., Csont, T., Luthert, P.J., Munro, P., Ferdinandy, P., Sántha, M. and **Lengyel, I.:** Bruch's membrane changes in transgenic mice overexpressing the human biglycan and apolipoprotein b-100 genes. (2009) Exp Eye Res. 89(2):178-186

Nan, R., Gor, J., **Lengyel, I.** and Perkins, S.J.,: Uncontrolled zinc- and copper-induced oligomerisation of the human complement regulator Factor H and its possible implications for function and disease. (2008) J Mol Biol. 384(5):1341-1352

I. Lengyel, Peto T, Bird AC, van Kuijk FJ: Reply to "Comment on: "High concentration of zinc in sub-retinal pigment epithelial deposits" (2008) Exp Eye Res. 86(5) 862-863.

I. Lengyel and Peto T: Cure or cause: the opposing roles for zinc in age-related macular degeneration (2008) Expert Rev Ophthal. 3 1-4

I. Lengyel, Flinn, J.M, Peto T, Linkous, D.H, Cano, K, Bird A.C, Lanzirotti A, Frederickson C.J. and van Kuijk F.J.G.M: High concentration of zinc in sub-retinal pigment epithelial deposits (2007) Exp Eye Res. 84 772-780 (see news coverage: http://news.bbc.co.uk/1/hi/health/6457427.stm)

I. Lengyel, R. Thomas, C.J. Frederickson and T. Pető (2006) Zinc and age-related macular degeneration In Trace Elements in the Food Chain, Eds: M, Szilagyi, K. Szentmihalyi. Publisher: Hungarian Academy of Sciences, ISBN 963 7067 132, pages: 411-415

A.Z. Rónai, M. Al-Khrasani, S. Benyhe, **I. Lengyel**, L. Kocsis, G. Orosz, G. Tóth, E. Kató, L. Tótfalusi: Partial and full agonism in endomorphin derivatives: comparison by null and operational models (2006) Peptides 27 1507–1513

I. Lengyel, A. Tufail, H. Al-Hossain, P. Luthert, A. Bird and G. Jeffery: The association of drusen deposition with capillary walls in the aging human eye (2004) Invest Ophthalmol Vis Sci. 45 2886–2892

I. Lengyel, K. Voss, M. Cammarota, K. Bradshaw, V. Brent, K. Murphy, J.A.P. Rostas and T.V.P. Bliss: Autonomous activity of CaMKII is only transiently increased following the induction of long-term potentiation in the hippocampus (2004) Eur J Neurosci 20 3063-3072

Zs. Molnar, P. Kovács, I. Lazckó, K. Soós, L. Fülöp, B. Penke and **I. Lengyel**: Enhanced G-protein activation by a mixture of Aß(25-35), Aß(1-40/42) and zinc (2004) J Neurochem 89 1215–1223

J.K. Frizzo, F. Tramontina, E. Bortoli C. Gottfried, R.B. Leal, **I. Lengyel,** R. Donato, P.R. Dunkley and C-A. Goncalves S100B-mediated inhibition of the phosphorylation of GFAP is prevented by TRTK-12 (2004) Neurochem.Res. 29 735-740

Zs. Molnár, A. Horváth, **I. Lengyel**, K. Soós, B. Penke and D. Budai: The effects of microiontophoretically applied aggregated beta-amyloid peptides on NMDA-induced synaptic transmission in rat hippocampus (2004) Neuroreport 15 1649-1652

B. Penke, Z. Datki, C. Hetényi, Z. Molnár, **I. Lengyel**, K. Soós and M. Zarándi: molecular pathomechanisms of alzheimer`s disease (2003) J. Mole. Structure (Theochem) 666 507-513

I. Lengyel, G. Orosz, D. Biyashev, L. Kocsis, M. Al-Khrasani, A. Rónai, C. Tömböly, Zs. Fürst, G. Tóth, and A. Borsodi: Side chain modifications change the binding and agonist properties of endomorphin 2 (2002) Biochem Biophys Res Comm 290 153-161

I. Lengyel, M. Cammarota, V. Brent and J.A.P. Rostas: Measurement of autonomous Ca^{2+}/calmodulin-stimulated protein kinase II activity in rat hippocampus: effects of tissue preparation (2001) J Neurochem 76, 149-154

I. Lengyel, A.C.Nairn, A. McCluskey, G. Toth, B. Penke and J.A.P. Rostas: Auto-inhibition of of Ca^{2+}/calmodulin-stimulated protein kinase II by its ATP-binding domain. (2001) J Neurochem 76 1066-1072.

C. Tömböly, R. Dixit, **I. Lengyel**, A. Borsodi and G. Tóth: Preparation of specifically tritiated endomorphins (2001) J Labelled Comp Radiopharmacol 44 355-363.

M. AL-Khrasani, G. Orosz, L. Kocsis, V. Farkas, A. Magyar, **I. Lengyel**, S. Benyhe, A. Borsodi and A.Z. Rónai: Receptor constants for endomorphin-1 and endomorphin-1-ol indicate differences in efficacy and receptor occupancy (2001) Eur J Pahrmacol 421 61-67

I. Szatmári, D. Biyashev, C. Tömböly, G. Tóth, M. Mácsai, G. Szabó, A. Borsodi and **I. Lengyel**: Influence of degradation on receptor binding properties and biological activity of endomorphin 1 (2001) Biochem Biophys Res Comm 284 771-776

J. Xue, X. Wang, M. Kinoshita, P.J. Milburn, **I. Lengyel**, J.A.P. Rostas, P.J. Robinson: Phosphorylation of a new brain-specific septin, G-septin, by cyclic GMP-dependent protein kinase. (2000) J Biol Chem, 275, 10047-10056

I. Lengyel, S. Fieuw-Makaroff, A.L. Hall, A.T.R. Sim, J.A.P. Rostas, P.R. Dunkley: Modulation of the activity of Calcium/Calmodulin-stimulated protein kinase II by zinc. (2000) J Neurochem 75, 594-605.

I. Lengyel, L.E. Olesen, K.A. Nichol, K.L. Brain, P.J. Robinson, X. Wang, M.R. Bennett and J.A.P. Rostas (1999) Protein phosphorylation in chick ciliary ganglion under conditions that induce long lasting change in synaptic transmission: phosphoprotein targets for nitric oxide action. Neuroscience, 90, 607-619

T.B. Cheah, L. Bobrovskaya, C.A. Goncalves, A. Hall, R.E. Elliot, **I. Lengyel,** S.J. Bunn, P. Marley and P.R. Dunkley: Tyrosine hydroxylase in bovine adrenal chromaffin cells: Simultaneous measurement of phosphorylation and activity. (1999) J Neurosci Methods, 87, 167-174

I. Lengyel, K.A. Nichol, J.W. Heath, G.J. Little and J.A.P. Rostas (1998) alpha and beta subunits of Ca^{2+}/calmodulin-stimulated protein kinase II are localized in different neurons in chick ciliary ganglion. Neuroreport 9, 2753-2755

I. Lengyel, K.A. Nichol, A.T.R. Sim, M.R. Bennett, P.R. Dunkley and J.A.P. Rostas (1996). Characterization of protein kinase and protein phosphatase systems in chick ciliary ganglion. Neuroscience 70, 577-588.

M.A. Deli, F. Joó, I. Krizbai, **I. Lengyel**, G.M. Nunzi and J.R. Wolff (1993). Calcium\calmodulin-stimulated protein kinase II is present in primary cultures of cerebral endothelial cells. J Neurochem 60, 1960-1963.

I. Krizbai, M.A. Deli, **I. Lengyel**, K. Maderspach, M. Pákáski, F. Joó, and J.R. Wolff (1993). In situ hybridization with digoxigenin labeled oligonucleotide probes: detection of CAMK-II gene expression in primary cultures of cerebral endothelial cells. Neurobiology 1, 235-240.

F. Joó, **I. Lengyel**, J. Kovács and B. Penke (1992). Regulation of transendothelial transport in the cerebral microvessels: the role of second messenger's-generating systems. Progress in Brain Research 91: 177-187.

P. Candeo, M. Favaron, **I. Lengyel**, R. M. Manev, J. M. Rimland and H. Manev (1992). Pathological phosphorylation causes neuronal death: effect of okadaic acid in primary culture of cerebellar granule cells. Journal of Neurochemistry 59, 1558-1561.

Z. Oláh, **I. Lengyel** and N. Halász (1990). Early X-irradiation of rats - 4. Decrease in phosphorylation of low molecular weight proteins in the olfactory bulb accompanies the loss of GABAergic microneurons. Neurochem Internat 16: 331-334.

Z. Oláh, R. Novák, **I. Lengyel,** E. Dux, and F. Joó (1988). Kinetics of protein phosphorylation in microvessels isolated from rat brain: Modulation by second messengers. J Neurochem 51: 49-56.