

Curriculum Vitae

António Francisco Ambrósio
2014

Personal Data

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Nationality Portuguese
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Education

2000 - Ph.D. in Cell Biology, Faculty of Sciences and Technology, University of Coimbra
1997 - M.Sc. in Cell Biology, Faculty of Sciences and Technology, University of Coimbra
1994 - B.Sc. in Biochemistry, Faculty of Sciences and Technology, University of Coimbra

Current and Most Recent Positions

Jan 2013- President of the Portuguese Biochemistry Society (SPB)
Feb 2012- Vice-Director (for Scientific Research and Technological Development), Faculty of Medicine, University of Coimbra
Feb 2012- Member of the Scientific Committee, Faculty of Medicine
Sep 2010- Principal Investigator, Faculty of Medicine, University of Coimbra
Mar 2010- Member of the Commission for the Strategic and Scientific Coordination, IBILI, Faculty of Medicine, University of Coimbra
Jan 2009- Dec 2012 Vice-President of the Portuguese Biochemistry Society (SPB)
Jan 2009- Scientific Area Coordinator (Pharmacology and Experimental Therapeutics), IBILI, Faculty of Medicine, University of Coimbra
Jan 2007- Scientific Consultant at AIBILI (Association for Innovation and Biomedical Research on Light and Image)
Jul 2002- Group Leader (Retinal Dysfunction & Neuroinflammation Group), IBILI, Faculty of Medicine, University of Coimbra

Awards

Mar 2013- Research Grant - Portuguese Society of Diabetology
Oct 2011 - Oral Communication - Mediterranean Group for the Study of Diabetes
Apr 2011 - Research Grant - Portuguese Society of Diabetology
Oct 2007 - Best poster presented at Physiology, Biochemistry and Pharmacology Sections at EVER 2007 Meeting – European Association for Vision and Eye Research
Oct 2005 - Best poster in Retina and Vitreous Sections at EVER 2005 Meeting – European Association for Vision and Eye Research
May 2005 - Best poster at 15th EASDec Meeting – European Association for the Study of Diabetes – Eye Complications Study Group (EASDec)
Set 2004 - Best poster in Retina, Cornea, Anatomy/Cell Biology, Uveitis and Lens Section at EVER 2004 Meeting – European Association for Vision and Eye Research

Coordination of Research Projects (selected 10 over 19 as Principal Investigator)

Mar 2013-Feb 2015 PTDC/NEU-OSD/1113/2012 - “Neuropeptide Y system: a new potential therapeutic target in diabetic retinopathy”. Funding: Foundation for Science and Technology (FCT) – 131.715,00 €
Mar 2011 – Sep 2014 “Fatty acid amide hydrolase (FAAH) inhibitors: evaluation of their potential to inhibit intraocular pressure (IOP)”. Funding: BIAL, Portugal (Pharmaceutical Company) – 300.000,00 €
Apr 2010 – Mar 2013 PTDC/SAU-NEU/99075/2008 – “Life and death of retinal ganglion cells: unmasking the neuromodulatory and neuroprotective roles of Neuropeptide Y”. Funding: Foundation for Science and Technology (FCT) – 150.000,00 €
Jan 2008 – Mar 2010 “Identification of molecular and cellular mechanisms underlying the protective effects of calcium dobesilate in diabetic retinopathy”. Funding: OM Pharma, Switzerland (Pharmaceutical Company) - 80.500,00 €
Jun 2007 – Dec 2010 PTDC/SAU-NEU/71228/2006 – “Regulation of AMPA receptors by hyperglycemia in the retina”. Funding: Foundation for Science and Technology (FCT) – 108.980,00 €
Jan 2007 – Dec 2008 “Nanomedicine and the new therapeutic strategies: development of supramolecular structures for the treatment of ocular diseases. Funding: Commission for Coordination and Regional Development of Center (of Portugal) – iCentro: Operational Program of Innovative Actions – 388.696,00 €
Jan 2007 – Apr “Evaluation of the efficacy of a new formula on the prevention of cataract formation in a diabetic rat model”.

2007	Funding: Oystershell, Belgium (Pharmaceutical Company) – 12.631,00 €
Oct 2002 - Dec 2005	POCTI/CBO/38545/2001 – “Mechanisms of cell degeneration in diabetic retinopathy”. Principal Investigator.
Jan 2001 – Dec 2001	Funding: Foundation for Science and Technology (FCT) – 97.010,00 €
	“Evaluation of L-DOPA-induced neurotoxicity and effects of COMT inhibitors”. Principal Investigator.
	Funding: BIAL, Portugal (Pharmaceutical Company) – 60.000,00 €

Supervision

4 Post Docs
 19 PhD (8 as supervisor and 11 as co-supervisor)
 14 MSc (6 as supervisor and 8 as co-supervisor)

Publications

60 scientific papers.
 6 book chapters.

Invited Speaker Communications: 29
Communications/Posters: ~300

Others

Org. Committee: “XVIII Congress of the Portuguese Biochemical Society”, 2014
 Org. Committee of the I, II and III Annual Meeting of IBILI, Coimbra (2009, 2010, 2011, 2012, 2013)
 Editorial Board: “Recent Patent Reviews CNS Drug Discovery”, Jan 2006 – May 2010
 Sci. Committee of the 1st, 2nd and 3rd International Meeting Portuguese Society for Stem Cells and Cellular Therapies” (2006, 2007 and 2008)
 Chair: “2nd International Meeting Portuguese Society for Stem Cells and Cellular Therapies”, 2007
 Editorial Board: “4th Forum European Neuroscience”, 2004
 Org. Committee: “7th Meeting Portuguese Society for Neuroscience”, 2001

Scientific Activity Areas

Vision Sciences, Neuroscience, Pharmacology, Cell and Molecular Biology

Current Research Topics of Interest

Retinal Degenerative Diseases (diabetic retinopathy, glaucoma); Ganglion cell; Blood-Retinal Barrier; Blood-Brain Barrier; Neuropeptide Y; Adenosine; Glutamate; Endocannabinoids; Neurodegeneration; Neuroprotection; Neuroinflammation; Neuromodulation

Publications

Book Chapters (selected 4 from over 6)

1. **A.F. Ambrósio**, P. Pereira and J. Cunha-Vaz. Diabetic retinopathy, inflammation and proteasome. In: Interaction between neurons and glia in aging and disease. Eds. J.O. Malva, A.C. Rego, R.A. Cunha and C.R. Oliveira. Springer-Verlag, New York, 2007, 475-502.
2. **A.F. Ambrósio**. Cell factors. In: Diabetic Retinopathy. Ed. J. Cunha-Vaz. World Scientific, Singapore, 2011, 125-142.
3. E.C. Leal and **A.F. Ambrósio**. Neovascularization in Diabetic Retinopathy. In: Diabetic Retinopathy. Ed. J. Cunha-Vaz. World Scientific, Singapore, 2011, 143-152.
4. E.C. Leal, **A.F. Ambrósio** and J. Cunha-Vaz. Nitric oxide synthase in retinal vascular diseases. In: Studies on retinal and choroidal disorders: Oxidative stress in applied basic research and clinical practice. Ed. Robert D. Stratton, William W. Hauswirth and Thomas W. Gardner. Springer Science & Business Media, LLC, New York, 2012, 529-544.

Papers (Total: 60)

1. J.O. Malva, **A.F. Ambrósio**, R.A. Cunha, J.A. Ribeiro, A.P. Carvalho and C.M. Carvalho. A functionally active presynaptic high-affinity kainate receptor in the rat hippocampal CA3 subregion. *Neurosci. Lett.* 1995, 185:1-4.
2. J.O. Malva, **A.F. Ambrósio**, A.P. Carvalho, C.B. Duarte and C.M. Carvalho. Involvement of class A calcium channels in the KCl induced Ca²⁺ influx in hippocampal synaptosomes. *Brain Res.* 1995, 696:242-245.
3. **A.F. Ambrósio**, J.O. Malva, A.P. Carvalho and C.M. Carvalho. Modulation of Ca²⁺ channels by activation of adenosine A1 receptors in rat striatal glutamatergic nerve terminals. *Neurosci. Lett.* 1996, 220:163-166.
4. S.M. Sequeira, **A.F. Ambrósio**, J.O. Malva, A.P. Carvalho and C.M. Carvalho. Modulation of glutamate release from rat hippocampal synaptosomes by nitric oxide. *Nitric Oxide* 1997, 1:315-329.

5. J.O. Malva, **A.F. Ambrósio**, A.P. Carvalho and C.M. Carvalho. Increase of the intracellular Ca²⁺ concentration mediated by transport of glutamate into rat hippocampal synaptosomes: characterization of the activated voltage sensitive Ca²⁺ channels. *Neurochem. Int.* 1997, 32:7-16.
6. **A.F. Ambrósio**, J.O. Malva, A.P. Carvalho and C.M. Carvalho. Inhibition of N-, P/Q- and other types of Ca²⁺ channels in rat hippocampal nerve terminals by adenosine A1 receptor. *Eur. J. Pharmacol.* 1997, 340:301-310.
7. **A.F. Ambrósio**, A.P. Silva, J.O. Malva, P. Soares-da-Silva, A.P. Carvalho and C.M. Carvalho. Carbamazepine inhibits L-type Ca²⁺ channels in cultured rat hippocampal neurons stimulated with glutamate receptor agonists. *Neuropharmacology* 1999, 38:1349-1359.
8. **A.F. Ambrósio**, A.P. Silva, J.O. Malva, José F. Mesquita, A.P. Carvalho and C.M. Carvalho. Role of desensitization of AMPA receptors on the neuronal viability and on the [Ca²⁺]_i changes in cultured rat hippocampal neurons. *Eur. J. Neurosci.* 2000, 12:2021-2031.
9. **A.F. Ambrósio**, A.P. Silva, I. Araújo, J.O. Malva, P. Soares-da-Silva, A.P. Carvalho and C.M. Carvalho. Neurotoxic/neuroprotective profile of carbamazepine, oxcarbazepine and two new putative antiepileptic drugs, BIA 2-093 and BIA 2-024. *Eur. J. Pharmacol.* 2000, 406:191-201.
10. **A.F. Ambrósio**, A.P. Silva, J.O. Malva, P. Soares-da-Silva, A.P. Carvalho and C.M. Carvalho. Inhibition of glutamate release by BIA 2-093 and BIA 2-024, two novel derivatives of carbamazepine, due to blockade of sodium but not calcium channels. *Biochem. Pharmacol.* 2001, 61:1271-1275.
11. A.P. Silva, J.O. Malva, **A.F. Ambrósio**, A.P. Carvalho and C.M. Carvalho. Role of kainate receptor activation and desensitization on the [Ca²⁺]_i changes in cultured rat hippocampal neurons. *J. Neurosci. Res.* 2001, 65:378-386.
12. **A.F. Ambrósio**, P. Soares-da-Silva, C.M. Carvalho and A.P. Carvalho. Mechanisms of action of carbamazepine and their derivatives, oxcarbazepine, BIA 2-093 and BIA 2-024. *Neurochem. Res.* 2002, 27:121-130.
13. I.M. Araújo, **A.F. Ambrósio**, E.C. Leal, P.F. Santos, A.P. Carvalho and C.M. Carvalho. Neuronal nitric oxide synthase proteolysis limits the involvement of nitric oxide in kainate-induced neurotoxicity in hippocampal neurons. *J. Neurochem.* 2003, 85:791-800.
14. J.O. Malva, A.P. Vieira, A.P. Teotónio, **A.F. Ambrósio**, C.M. Carvalho and C.R. Oliveira. Cobalt staining of cultured hippocampal neurons mediated by non-desensitizing activation of AMPA but not kainate receptors. *Neuroreport* 2003, 14:847-850.
15. I.M. Araújo, M.J. Verdasca, **A.F. Ambrósio** and C.M. Carvalho. Nitric oxide inhibits complex I following AMPA receptor activation via peroxynitrite. *Neuroreport* 2004, 15:2007-2011.
16. I.M. Araújo, **A.F. Ambrósio**, E.C. Leal, M.J. Verdasca, J.O. Malva, P. Soares-da-Silva, A.P. Carvalho and C.M. Carvalho. Neurotoxicity induced by antiepileptic drugs in cultured hippocampal neurons: a comparative study between carbamazepine, oxcarbazepine and two new putative antiepileptic drugs, BIA 2-024 and BIA 2-093. *Epilepsia* 2004, 45:1498-1505.
17. I.M. Araújo, M.J. Verdasca, E.C. Leal, Ben A. Bahr, **A.F. Ambrósio** and C.M. Carvalho. Early calpain-mediated proteolysis following AMPA receptor activation compromises neuronal survival in cultured hippocampal neurons. *J. Neurochem.* 2004, 91:1322-1331.
18. E.C. Leal, A.R. Santiago and **A.F. Ambrósio**. The old and new drug targets in diabetic retinopathy: from biochemical changes to inflammation and neurodegeneration. *Curr. Drug Targets CNS Neurol. Disord.* 2005, 4:421-434.
19. J.M.N. Duarte, C.R. Oliveira, **A.F. Ambrósio** and R.A. Cunha. Modification of adenosine A1 and A2A receptor density in the hippocampus of streptozotocin-induced diabetic rats. *Neurochem. Int.* 2006, 48:144-150.
20. A.R. Santiago, M.J. Garrido, P.F. Santos, A.J. Cristóvão and **A.F. Ambrósio**. High glucose and diabetes increase the release of [³H]-D-aspartate in retinal cell cultures and in rat retinas. *Neurochem. Int.* 2006, 48:453-458.
21. A.R. Santiago, S.C. Rosa, P.F. Santos, A.J. Cristóvão, A.J. Barber and **A.F. Ambrósio**. Elevated glucose changes the expression of ionotropic glutamate receptor subunits and impairs calcium homeostasis in retinal neural cells. *Invest. Ophthalmol. Vis. Sci.* 2006, 47:4130-4137.
22. A.R. Santiago, A.J. Cristóvão, P.F. Santos, C.M. Carvalho and **A.F. Ambrósio**. High glucose induces caspase-independent cell death in retinal neural cells. *Neurobiol. Dis.* 2007, 25:464-472.
23. A.R. Álvaro, J. Rosmaninho-Salgado, A.R. Santiago, J. Martins, C. Avelaira, P.F. Santos, T. Pereira, D. Gouveia, A.L. Carvalho, E. Grouzmann, **A.F. Ambrósio** and C. Cavadas. NPY in rat retina is present in neurons, in endothelial cells and also in microglial and Muller cells. *Neurochem. Int.* 2007, 50:757-763.

24. I.M. Araújo, B.P. Carreira, T. Pereira, P.F. Santos, D. Soulet, A. Inácio, B.A. Bahr, A.P. Carvalho, **A.F. Ambrósio** and C.M. Carvalho. Changes in calcium dynamics following the reversal of the sodium-calcium exchanger have a key role in AMPA receptor-mediated neurodegeneration via calpain activation in hippocampal neurons. *Cell Death Differ.* 2007, 14:1635-1646.
25. E.C. Leal, A. Manivannan, K.-I. Hosoya, T. Terasaki, J. Cunha-Vaz, **A.F. Ambrósio** and J.V. Forrester. Inducible nitric oxide synthase isoform is a key mediator of leukostasis and blood-retinal barrier breakdown in diabetic retinopathy. *Invest. Ophthalmol. Vis. Sci.* 2007, 48:5257-5265.
26. A.R. Álvaro, J. Martins, A.C. Costa, E. Fernandes, F. Carvalho, **A.F. Ambrósio** and C. Cavadas. Neuropeptide Y protects retinal neural cells against cell death induced by ecstasy. *Neuroscience* 2008, 152:97-105.
27. A.R. Santiago, J.M. Hughes, W. Kamphuis, R.O. Schlingemann and **A.F. Ambrósio**. Diabetes changes ionotropic glutamate receptor subunit expression level in the human retina. *Brain Res.* 2008, 1198:153-9.
28. A.R. Álvaro, J. Martins, I.M. Araújo, J. Rosmaninho-Salgado, **A.F. Ambrósio** and C. Cavadas. Neuropeptide Y stimulates retinal neural cell proliferation - involvement of nitric oxide. *J. Neurochem.* 2008, 105:2501-2510.
29. A.R. Santiago, C.M. Carvalho, A.P. Carvalho and **A.F. Ambrósio**. Differential contribution of L-, N-, and P/Q-type calcium channels to $[Ca^{2+}]_i$ changes evoked by kainate in hippocampal neurons. *Neurochem. Res.* 2008, 33:1501-1508.
30. E.C. Leal, C.A. Avelaira, A.F. Castilho, F.I. Baptista and **A.F. Ambrósio**. Muller cells do not influence leukocyte adhesion to retinal endothelial cells. *Ocul. Immunol. Inflamm.* 2008, 16:173-179.
31. G. Costa, T. Pereira, A.M. Neto, A.J. Cristóvão, **A.F. Ambrósio** and P.F. Santos. High glucose changes extracellular adenosine triphosphate levels in rat retinal cultures. *J. Neurosci. Res.* 2009, 87:1375-1380.
32. E.C. Leal, C.A. Avelaira, A.F. Castilho, A.M. Serra, F.I. Baptista, K.-I. Hosoya, J.V. Forrester and **A.F. Ambrósio**. High glucose and oxidative/nitrosative stress conditions induce apoptosis in retinal endothelial cells by a caspase-independent pathway. *Exp. Eye Res.* 2009, 88:983-991.
33. A.R. Álvaro, J. Rosmaninho-Salgado, **A.F. Ambrósio** and C. Cavadas. Neuropeptide Y inhibits $[Ca^{2+}]_i$ changes in rat retinal neurons through NPY Y1, Y4 and Y5 receptors. *J. Neurochem.* 2009, 109:1508-1515.
34. A.R. Santiago, J.M. Gaspar, F.I. Baptista, A.J. Cristóvão, P.F. Santos, W. Kamphuis and **A.F. Ambrósio**. Diabetes changes the levels of ionotropic glutamate receptors in the rat retina. *Mol. Vis.* 2009,
35. T.O.S. Pereira, G.N.F. Costa, A.R.S. Santiago, **A.F. Ambrósio** and P.F.M. Santos. High glucose enhances intracellular Ca^{2+} responses triggered by purinergic stimulation in retinal neurons and microglia. *Brain Res.* 2010, 1316:129-138.
36. C.A. Avelaira, A.F. Castilho, F.I. Baptista, N.F. Simões, C.R. Fernandes, E.C. Leal and **A.F. Ambrósio**. High glucose and interleukin-1 beta downregulate interleukin-1 type I receptor (IL-1RI) in retinal endothelial cells by enhancing its degradation by a lysosome-dependent mechanism. *Cytokine* 2010, 49:279-286.
37. B.P. Carreira, M.I. Morte, Â. Inácio, J. Rosmaninho-Salgado, G. Costa, F. Agasse, A. Carmo, P. Couceiro, P. Brundin, **A.F. Ambrósio**, Caetana M. Carvalho and I.M. Araújo. Nitric oxide stimulates the proliferation of neural stem cells bypassing the epidermal growth factor receptor. *Stem Cells* 2010, 28:1219-1230.
38. J.M. Gaspar, F.I. Baptista, J. Galvão, A.F. Castilho, R.A. Cunha and **A.F. Ambrósio**. Diabetes differentially affects the content of exocytotic proteins in hippocampal and retinal nerve terminal. *Neuroscience* 2010, 169:1589-1600.
39. E.C. Leal, J. Martins, J. Liberal, P. Voabil; C. Chiavaroli, J. Bauer, J. Cunha-Vaz and **A.F. Ambrósio**. Calcium dobesilate inhibits the alterations in tight junction proteins and leukocyte adhesion to retinal endothelial cells induced by diabetes. *Diabetes* 2010, 59:2637-2645.
40. C.A. Avelaira, C.-M. Lin, S.F. Abcouwer, **A.F. Ambrósio** and D.A. Antonetti. TNF- α signals through PKC ζ /NF- κ B to alter the tight junction complex and increase retinal endothelial cell permeability. *Diabetes* 2010, 59:2872-2882.
41. J.M. Gaspar, A.F. Castilho, F.I. Baptista, J. Liberal and **A.F. Ambrósio**. Long-term exposure to high glucose induces changes in the content and distribution of some exocytotic proteins in cultured hippocampal neurons. *Neuroscience* 2010, 171:981-992.
42. A.R. Santiago, M.J. Garrido, A.J. Cristóvão, J.M.N. Duarte, R.A. Carvalho and **A.F. Ambrósio**. Evaluation of the impact of diabetes on retinal metabolites by NMR spectroscopy. *Curr. Eye Res.* 2010, 35:992-1001.
43. F.I. Baptista, J.M. Gaspar, A. Cristóvão, P.F. Santos, A. Köfalvi and **A.F. Ambrósio**. Diabetes induces early transient changes in the content of vesicular transporters and no major effects in neurotransmitter release in hippocampus and retina. *Brain Res.* 2011, 1383:257-269.

44. T. Martins, S. Baptista, J. Gonçalves, E. Leal, N. Milhazes, F. Borges, C.F. Ribeiro, O. Quintela, E. Lendoiro, M. López-Rivadulla, **A.F. Ambrósio** and A.P. Silva. Methamphetamine transiently increases the blood-brain barrier permeability in the hippocampus: role of tight junction proteins and matrix metalloproteinase-9. *Brain Res.* 2011, 1411:28-40.
45. C.C. Portugal, T.G. Encarnacao, R. Socodato, S.R. Moreira, D. Brudzewsky, **A.F. Ambrósio** and R. Paes-de-Carvalho. Nitric oxide modulates sodium vitamin C transporter 2 (SVCT-2) expression via protein kinase G (PKG) and nuclear factor- κ B (NF- κ B). *J Biol Chem.* 2012, 287:3860-3872.
46. A. Gonçalves, E. Leal, A. Paiva, E. Teixeira Lemos, F. Teixeira, C.F. Ribeiro, F. Reis, **A.F. Ambrósio** and R. Fernandes. Protective effects of the dipeptidyl peptidase IV inhibitor sitagliptin in the blood-retinal barrier in a type 2 diabetes animal model. *Diabetes Obes Metab.* 2012, 14:454-463.
47. J. Martins, M. Castelo-Branco, A. Batista, B. Oliveiros, A.R. Santiago, J. Galvão, E. Fernandes, F. Carvalho, C. Cavadas and **A.F. Ambrósio**. Effects of 3,4-methylenedioxymethamphetamine administration on retinal physiology in the rat. *PLoS One.* 2011;6(12):e29583. Epub 2011 Dec 27.
48. B.P. Carreira, M.I. Morte, A.S. Lourenço, A.I. Santos, A. Inácio, **A.F. Ambrósio**, C.M. Carvalho and I.M. Araújo. Differential contribution of the guanylyl cyclase-cyclic GMP-protein kinase G pathway to the proliferation of neural stem cells stimulated by nitric oxide. *Neurosignals* 2012 Feb 23 [Epub ahead of print]
49. G.N. Costa, J. Vindeirinho, C. Cavadas, **A.F. Ambrósio** and P.F. Santos. Contribution of TNF receptor 1 to retinal neural cell death induced by elevated glucose. *Mol Cell Neurosci.* 2012, 50:113-123.
50. A. F. Castilho, J. T. Liberal, F. I. Baptista, J. M. Gaspar, A. L. Carvalho, **A.F. Ambrósio**. Elevated glucose concentration changes the content and cellular localization of AMPA receptors in the retina but not in the hippocampus. *Neuroscience.* 2012, 219:23-32.
51. A. F. Castilho, C. A. Avelaira, E. C. Leal, N. F. Simões, C. R. Fernandes, R. I. Meirinhos, F. I. Baptista, **A.F. Ambrósio**. Heme oxygenase-1 protects retinal endothelial cells against high glucose- and oxidative/nitrosative stress-induced toxicity *PLoS One.* 2012;7(8):e42428. Epub 2012 Aug 3.
52. T. Martins, T. Burgoyne, B.A. Kenny, N. Hudson, C.E. Futter, **A.F. Ambrósio**, A. P. Silva, J. Greenwood and P. Turowski. Methamphetamine-induced nitric oxide promotes vesicular transport in blood-brain barrier endothelial cells. *Neuropharmacology.* 2013, 65: 74-82.
53. R. Socodato, F.N. Santiago, C.C. Portugal, A.F. Domingues, A.R. Santiago, J.B. Relvas, **A.F. Ambrósio** and R. Paes-de-Carvalho. Calcium-permeable α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid receptors trigger neuronal nitric-oxide synthase activation to promote nerve cell death in a Src kinase-dependent fashion. *J Biol Chem.* 2012, 287:38680-38694.
54. A. Santos-Carvalho, C.A. Avelaira, F. Elvas, **A.F. Ambrósio** and C. Cavadas. Neuropeptide Y receptors Y1 and Y2 are present in neurons and glial cells in rat retinal cell in culture. *Invest. Ophthalmol. Vis. Sci.* 2013 54:429-443.
55. A. Santos-Carvalho, F. Elvas, A.R. Álvaro, **A.F. Ambrósio** and C. Cavadas. Neuropeptide Y receptors activation protects rat retinal neural cells against necrotic and apoptotic cell death induced by glutamate. *Cell Death Dis.* 2013, 4:e636.
56. F.I. Baptista, M.J. Pinto, F. Elvas, R.D. Almeida and **A.F. Ambrósio**. Diabetes alters KIF1A and KIF5B motor proteins in the hippocampus. *PLoS One.* 2013, 8(6):e65515.
57. A. Gonçalves, **A.F. Ambrósio** and R. Fernandes. Regulation of claudins in blood-tissue barriers under physiological and pathological states. *Tissue Barriers* 2013, 1:3, e24782.
58. J.M. Gaspar, A. Martins, R. Cruz, C.M.P. Rodrigues, **A.F. Ambrósio** and A.R. Santiago. Tauroursodeoxycholic acid protects retinal neural cells from cell death induced by prolonged exposure to elevated glucose. *Neuroscience.* 2013;253:380-888.
59. M.I. Morte, B.P. Carreira, M.J. Falcão, **A.F. Ambrósio**, P. Soares-da-Silva, I.M. Araújo and C.M. Carvalho. Evaluation of neurotoxic and neuroprotective pathways affected by antiepileptic drugs in cultured hippocampal neurons. *Toxicol In Vitro.* 2013, 27:2193-2202.
60. A. Santos-Carvalho, A.R. Álvaro, J. Martins, **A.F. Ambrósio** and C. Cavadas. Emerging novel roles of neuropeptide Y in the retina: From neuromodulation to neuroprotection. *Prog Neurobiol.* 2014, 112:70-79.

Invited Presentations (selected 17 from over 29)

1. **A.F. Ambrósio**: The blood-retinal barrier - "2nd International University Program on the Role of Ischemia in Eye Diseases - Retinal Degeneration and Ischemia", Coimbra, February 14-15, 2004.
2. **A.F. Ambrósio**, E.C. Leal, A. Manivannan, C. Avelaira, A. Serra, A. Castilho, T. Terasaki, K. Hosoya, M. Cotter and J.V. Forrester: The involvement of nitric oxide in leukocyte adhesion and blood-retinal barrier breakdown. *Eur. J. Ophthalmol.* 2005,

- 15:299 - "15th Meeting of the European Association for the Study of Diabetes – Eye Complications Study Group (EASDec)", Coimbra, May 27-29, 2005.
3. **A.F. Ambrósio:** Cell factors in diabetic retinopathy - "82 Congreso de la Sociedad Española de Oftalmología", Coruña (Spain), September 27-30, 2006.
 4. **A.F. Ambrósio:** Anti-inflammatory drugs as a novel therapeutic strategy to treat diabetic retinopathy? - "14th Mainzer Forum, Medicinal Chemistry, Neuroinflammation and therapeutic strategies", Mainz, Germany, October 20, 2006.
 5. **A.F. Ambrósio:** Diabetic retinopathy: inside and beyond microvascular dysfunction - "I Congresso IBRO/LARC de Neurociências da América Latina, Caribe e Península Ibérica", Búzios, Brazil, September 1-4, 2008.
 6. **A.F. Ambrósio:** Impact of hyperglycemia on AMPA receptors in the retina - "I Congresso IBRO/LARC de Neurociências da América Latina, Caribe e Península Ibérica", Búzios, Brazil, September 1-4, 2008.
 7. **A.F. Ambrósio,** E.C. Leal, A. Manivannan, J. Cunha-Vaz and J.V. Forrester: Role of inflammation in blood-retinal barrier breakdown: animal models. *Acta Ophthalmologica Scandinavica* 86 (s243) 0-0, 2008 - "Euretina Session: Role of inflammation in the progression of diabetic macular edema" in EVER 2008, Portoroz, Slovenia, October 1-4, 2008.
 8. **A.F. Ambrósio,** C.A. Aveleira, E. Wolpert and D.A. Antonetti: The action of pro-inflammatory cytokines on retinal endothelial cell barrier permeability: protective effect of corticosteroids. *Acta Ophthalmologica Scandinavica* 86 (s243) 0-0, 2008 – "Special Interest Symposium: The role of inflammation in diabetic retinopathy" in EVER 2008, Portoroz, Slovenia, October 1-4, 2008.
 9. **A.F. Ambrósio:** Understanding the dual face of diabetic retinopathy: microvascular and neural dysfunction - "XIII Congreso de la Sociedad Española de Neurociencia", Tarragona, Spain, September 16-19, 2009.
 10. **A.F. Ambrósio:** Calcium dobesilate and diabetic retinopathy: understanding the mechanisms of action of an old drug - "II Simpósio de Neurociências" and "III Colóquio Luso-Brasileiro de Neuroquímica", Niterói, Brazil, December 6-7, 2010.
 11. **A.F. Ambrósio:** Unravelling the protective effects of calcium dobesilate against the blood-retinal barrier breakdown triggered by diabetes - "Barrier Systems in Health and Disease", Lisbon, May 30, 2011.
 12. **A.F. Ambrósio:** Unravelling the protective effects of calcium dobesilate against the blood-retinal barrier breakdown triggered by diabetes – SIRCOVA – Research in Retina and Vision Sciences, Valencia, Spain, November 4-5, 2011.
 13. **A.F. Ambrósio:** Control of neuroinflammation: Strategies to treat retinal degenerative diseases – "III Simpósio de Neurociências", Niterói, Brazil, November 28-29, 2011.
 14. **A.F. Ambrósio:** Diabetes and blood-retinal barrier breakdown: role of inflammatory mediators and strategies to control neuroinflammation – "Beating the Blood-Brain & Other Blood Barriers", Lisbon, February 6-8, 2013.
 15. **A.F. Ambrósio:** New potential molecular targets to treat ocular diseases. *FEBS J.* 280 (Suppl. 1) (2013), p. 285 – "38th FEBS Congress", San Petersburg, Russia, July 6-11, 2013.
 16. **A.F. Ambrósio:** The role of neuroinflammation in retinal degenerative diseases: microglia as a potential therapeutic target - "I Simpósio da Rede Glial Luso-Brasileira", Rio de Janeiro, Brasil, March 10-12, 2014.
 17. **A.F. Ambrósio:** The role of neuroinflammation in retinal degenerative diseases: microglia as a potential therapeutic target - "2nd Symposium of Pathophysiology of Glial Cell", Salvador da Bahia, Brasil, March 14, 2014.