**­­­­­­­­­­­ Curriculum Vitae**

**Mohammad Shamsul Ola, Ph.D.**

Associate Professor

Department of Biochemistry

College of Science

King Saud University

Riyadh, Saudi Arabia

P.O.Box: 2455, Postcode: 11451

Email: [mola@ksu.edu.sa](mailto:mola@ksu.edu.sa); [shamsulola@gmail.com](mailto:shamsulola@gmail.com)

Cell phone: 966-558013579

**Personal:**

Date of birth: March 29, 1969

Marital status: Married

**Education:**

B.Sc. 1990 A.M. University, Aligarh, India.

**Major in Biochemistry**

M.Sc. 1992 A. M. University, Aligarh, India.

**Major in Biochemistry**

M.Phil 1994 A. M. University, Aligarh, India

Thesis Title: Studies on goat hepatic lectin.

Ph.D. 1998 A. M. University, Aligarh, India.

Thesis Title: Studies on mammalian brain soluble lectins.

**Ph.D. degree in Biochemistry**

# Professional Experience:

* 1. Junior Research Fellow

1996-1998 Senior Research Fellow

1999-2000 Research associate, A. M. University, Aligarh, India.

**2000-2003** Postdoctoral research fellow**, Retinal Biochemistry,** Medical College of Georgia, **Augusta, Georgia, USA,**

**2003-2007** Research Scientist**, Retinal Biochemistry,** Hershey Medical Science

Center, Hershey**, Penn-State University, Pennsylvania, USA**

Laboratory head: Prof. Kathryn F. LaNoue

**2007-2008** Research Associate**, Hershey Medical Science Center,**

**Hershey, Penn-State University, Pennsylvania, USA**

**2008-2012 Assistant Professor,** Department of Ophthalmology, King Saud

University, Riyadh, KSA

**2012-Until Today Assistant Professor,** Department of Biochemistry, King Saud University, KSA

**Societies:**

Association for Research in Vision and Ophthalmology

Juvenile Diabetes Research Foundation International

International Society for Neurochemistry

**PROFESSIONAL SERVICE:**

**Associate editor and Member of Editorial Board:**

[Austin Journal of Clinical Ophthalmology](http://www.austinpublishinggroup.org/index.php/AJCO/index), Austin Publishing Group, Melbourne

iProbe Clinical & Exerimental Opthalmology, iProbe Group

Saudi Journal of Biological Sciences

**Journal reviewer for:**

*Diabetes, Diabetologia, Cell Biology International, Microvascular Research*

*Molecular Vision, Archives of Biochemistry & Biophysics, American Journal of Physiology and Endocrinology , Current eye research , Investigative Opthalmology & Visual Science , Eur J cytokines, Molecular Biology Reports, Acta Diabetologica*

*Neuropharmacology, Future Medicine, Expert Opin on Drug Delivery etc.,*

**On-going Research funding:**

1. **KACST funded grant**: Glutamate excitotoxicity: a potential role in neurovascular damage in diabetic retinopathy (**Funded for three years, 2012-2015, SR 1,074,000.00, Principal Investigator (PI): Dr.Mohammad Shamsul Ola**
2. **NPST-KACST Funded grant:** Analysis of potential neurodegenerative metabolites and neurotrophic factors in diabetic retinopathy **(Funding agency NPST-KACST for 2 years, Budget: SR 1,710,000.00, PI: Dr.Mohammad Shamsul Ola)**

**Grants under Review:**

1. Title: Role of angiotensin (1-12) and chymase in the pathogenesis of diabetic retinopathy, NPST-KACST for 2 years, Budget: SR 1962380, **PI: Dr.Mohammad Shamsul Ola** (Under review)
2. Title: Role of complement system in the pathogenesis of diabetic retinopathy, NPST-KACST for 2 years, Budget: SR 1855380, **Co-I: Dr.Mohammad Shamsul Ola** ( Under review)

**Peer Reviewed International Publications:**

1. Najma Ali, **Shamsul Ola** and Rashid Bhat (**1996**). Subunit structure of calcium dependent soluble goat hepatic lectin: Evidence that it has antigenic structure relationship with soluble 14K lectin family. ***Biochem.Mol.Int****.Vol*: 39 (5), 961-973.
2. **M.Shamsul Ola** and Naheed Banu (**2001**). Galectin from caprine brain: subunit structure, carbohydrate specificity and immunological cross-reactivity*.* ***J.Biochem. Mol. Biol. & Biophysics*** 5 (6), 1-9.
3. C.C.Bridges, A.Elsherbeny, P.Roon**, M.Shamsul Ola**, R.Kekuda, V.Ganapathy, R.S.Cameron, P.L.Cameron and S.B.Smith (**2001**). A comparision of caveolae and caveolin-1 to folate receptor α in retina and retinal pigment epithelium. ***Hitochem.J*.** 33: 149-158.
4. C.C. Bridges, **M.Shamsul Ola**, P.D. Prasad, A.El-Sherbeny, V.Ganapathy, and S.B.Smith (**2001**). Regulation of the taurine transporter gene expression by nitric oxide in cultured human retinal pigment epithelial cells. ***Am.J.Physiol*** 281: C1825-C1836.
5. **M.Shamsul Ola**, P.Moore, A.Elsherbeny, P.Roon, N.Agarwal, P.Sarthy, P.Caselles, V.Ganapathy, S.B. Smith (**2001**). Expression pattern of sigma receptor 1 mRNA and protein in mammalian retina. ***Mol. Brain Research***, 95, 86-95.
6. H.Naggar, **M.Shamsul Ola**, P.Moore, W.Huang, C.C. Bridges, V.Ganapathy and S.B. Smith (**2002**). Downregulation of the reduced folate transporter by glucose in cultured retinal pigment epithelial cells and in streptozotocin-induced diabetic mice, ***Investigative Opthalmology & Visual Science****.* 43 (2), 556-563.
7. C.C. Bridges, A.El-Sherbeny, **M.Shamsul Ola**, V.Ganapathy and S.B.Smith (**2002**). Transcellular transfer of folate across the retinal pigment epithelial. ***Curr.Eye.Res***, 24, (2), 129-138.
8. **M.Shamsul Ola**, Pamela Moore, Dennis Maddox, Amira El-Sherbeny, Penny Roon, Neeraj Agarwal, Vadivel Ganapathy and Sylvia B.Smith **(2002**). Analysis of Sigma Receptor (σR1) expression in retinal ganglion cells under hyperglycemic and diabetic conditions.***Mol.Brain Research*** 107(2): 97-107.
9. P.M. Martin, **M Shamsul Ola**, N.Agarwal, V.Ganapathy and S.B.Smith (**2004**). The sigma receptor ligand (+)-pentazocine prevents apoptotic retinal ganglion cell death induced in vitro by homocysteine and glutamate. ***Mol.Brain Research****.* 123(1-2) 66-75.
10. **Amira El-Sherbeny, Hany Naggar,Seiji Miyauchi, M. Shamsul Ola,Dennis M. Maddox, Pamela Moore Martin,Vadivel Ganapathy, and Sylvia B. Smith** (**2004**).

## Osmoregulation of Taurine Transporter Function and Expression in Retinal Pigment Epithelial, Ganglion, and Müller Cells**. *Investigative Ophthalmology and Visual Science*:** 45:694-701.

1. **M.Shamsul Ola**, Yuping Xu, Deborah Berkich,M.Todd King, Thomas W.Gardner, Ian Simpson and Kathryn LaNoue (**2006**) Analysis of glucose metabolism in diabetic retinas.

***American Journal of Physiology****.* 290, 1057-1067.

1. Dun.Y, Mysona B. Ells TV, AmarnathL**, M.Shamsul Ola**, V.Ganapathy and Sylvia B. Smith.(**2006**) Expression of the cystine-glutamate exchanger (xc-) in retinal ganglion cells and regulation by nitric oxide and oxidative stress**. *Cell Tissue Res****.* 324(2):189-202.
2. Xu Y, **M.Shmsul Ola**, Berkich DA, Gardner, TW, Barber, AJ, Palmieri, F, Hutson SH, LaNoue KF (**2007**). Energy Sources for glutamate neurotransmission in the retina: absence of the aspartate/glutamate carrier produces reliance on glycolysis in glia. ***Journal of Neurochemistry***101, 120-131.
3. **M.Shamsul Ola**, M.Tabish, FH Khan, N.Banu (**2007**) Purification and some properties of water buffaloes (Bubalus bubalis) brain galectin-1**. *Cell Biology International*** 31: 578-585.
4. You-Ree Cho, Hyo-Jeong Kim, So-Young Park, Hwi Jin Ko, Eun-Gyoung Hong, Takamasa Higashimori, **M. Shamsul Ola**, Kathryn F. LaNoue, Edward H. Leiter, and Jason. K. Kim. **(2007**) Hyperglycemia, maturity-onset obesity, and insulin resistance in NONcNZO10/LtJ males, a new mouse model of type 2 diabetes.  
   ***Am J Physiol Endocrinol Metab***. 293(1):E327-36.

1. Berkich DA, **M.Shamsul Ola**, Cole J, Sweatt AJ, Hutson SM, LaNoue KF (**2007**)

Mitochondrial transport proteins of the brain. ***J Neurosci Res***. 85(15):3367-77; PMID: 17847082

1. Ahmed Abu El-Asrar, Hani S Al-Mezaine and **M. Shamsul Ola** (**2009**) Changing paradigms in the treatment of diabetic retinopathy ***Curr Opin Ophthalmol***. Nov; 20 (6):532-8.
2. Ahmed Abu El-Asrar, Hani S Al-Mezaine, **M.Shamsul Ola** (**2009**) “Current management and future strategies for the treatments of diabetic retinopathy” ***Expert Review of Ophthalmology***, Vol. 4, No. 6, Pages 627-647
3. [Chintala S](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Chintala%20S%22%5BAuthor%5D), [Tóth K](http://www.ncbi.nlm.nih.gov/pubmed?term=%22T%C3%B3th%20K%22%5BAuthor%5D), [Yin MB](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Yin%20MB%22%5BAuthor%5D), [Bhattacharya A](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Bhattacharya%20A%22%5BAuthor%5D), [Smith SB](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Smith%20SB%22%5BAuthor%5D), **M. Shamsul Ola**, [Cao S](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Cao%20S%22%5BAuthor%5D), [Durrani FA](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Durrani%20FA%22%5BAuthor%5D), [Zinia TR](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Zinia%20TR%22%5BAuthor%5D), [Dean R](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Dean%20R%22%5BAuthor%5D), [Slocum HK](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Slocum%20HK%22%5BAuthor%5D), [Rustum YM](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Rustum%20YM%22%5BAuthor%5D). (**2010**) Downregulation of Cystine Transporter x(c) by Irinotecan in Human Head and Neck Cancer FaDu Xenografts. [***Chemotherapy***.](javascript:AL_get(this,%20'jour',%20'Chemotherapy.');) Jun 11;56(3):223-233.
4. El-Remessy AB, Khalifa Y, **M.Shamsul Ola**, Ibrahim AS, Liou GI.(**2010**) [Cannabidiol protects retinal neurons by preserving glutamine synthetase activity in diabetes.](http://www.ncbi.nlm.nih.gov/pubmed/20806080) ***Mol Vis***. Aug 4;16:1487-95.
5. El-Asrar AM, Nawaz MI, Kangave D, Geboes K, **M.Shamsul Ola**, Ahmad S, Al-Shabrawey M. (**2011**) [High-mobility group box-1 and biomarkers of inflammation in the vitreous from patients with proliferative diabetic retinopathy.](http://www.ncbi.nlm.nih.gov/pubmed/21850157) ***Mol Vis***. 17:1829-38.
6. **M.Shamsul Ola**, Hosoya K, LaNoue KF (**2011**). [Regulation of glutamate metabolism by hydrocortisone and branched chain keto acids in cultured rat retinal Müller cells (TR-MUL).](http://www.ncbi.nlm.nih.gov/pubmed/21756956) ***Neurochem Int.*** 59(5):656-63.
7. **M.Shamsul Ola**, Hosoya K, LaNoue KF (**2011**). [Influence of insulin on glutamine synthetase in the Müller glial cells of retina.](http://www.ncbi.nlm.nih.gov/pubmed/21626103) ***Metab Brain Dis***. 26(3):195-202.
8. **M.Shamsul Ola**, Nawaz M, Ahsan H (**2011**) [Role of Bcl-2 family proteins and caspases in the regulation of apoptosis.](http://www.ncbi.nlm.nih.gov/pubmed/21210296) ***Mol Cell Biochem***. 351(1-2):41-58.
9. **M.Shamsul Ola**, Nawaz MI, Siddiquei MM, Al-Amro S, Abu El-Asrar AM. (**2012**). [Recent advances in understanding the biochemical and molecular mechanism of diabetic retinopathy.](http://www.ncbi.nlm.nih.gov/pubmed/22226482) ***J Diabetes Complications***. 26(1):56-64.
10. Khan HA, **M Shamsul Ola**, (**2012**). Markers of blood coagulation, lipid profile, renal function test and serum electrolytes in streptozotocin-induced diabetic rats. ***Biomed Research***, 23 (3) 421-424.
11. Abu El-Asrar AM, Nawaz MI, Kangave D, Siddiquei MM, **M.Shamsul Ola**, Opdenakker G. (**2013**) Angiogenesis regulatory factors in the vitreous from patients with proliferative diabetic retinopathy. **Acta Diabetol**. 2013 Aug;50(4):545-51.
12. **M.Shamsul Ola**, Mohd Imtiaz Nawaz, Ahmed Abu El-Asrar, Marwan Abouammoh, Abdullah S. Alhomida (**2013**). Reduced level of brain derived neurotrophic factor (BDNF) in serum of diabetic retinopathy patients and in the retina of diabetic rats. ***Cell Mol Neurobiol***. 2013 Apr;33(3):359-67
13. Mohd Imtiaz Nawaz, Marwan Abdulrahman Abouammoh, Abdullah S. Alhomida, Mubarak Alfaran, **M. Shamsul Ola** (**2013**), Potential future drugs and their targets in the treatment of diabetic retinopathy, ***Medical Science Monitor*** 26;19:300-8.
14. **M. Shamsul Ola**, Nawaz MI, Khan HA, Alhomida AS.( **2013)** [Neurodegeneration and neuroprotection in diabetic retinopathy.](http://www.ncbi.nlm.nih.gov/pubmed/23358247)***Int J Mol Sci*.** 28;14(2):2559-72
15. Abu El-Asrar AM, Nawaz MI, **M. Shamsul Ola**, De Hertogh G, Opdenakker G, Geboes K**. (2013)** Expression of thrombospondin-2 as a marker in proliferative diabetic retinopathy**. *Acta Ophthalmol***. 91(3):e169-77. doi: 10.1111/aos.12035
16. **M.Shamsul Ola,** Mohammed M Ahmed,Hashish Hatem-Abuo**,** Salim Alrejaie, Abdullah S. Alhomida (**2013)**. Telmisartan ameliorates neurodegeneration in diabetic rat retina**, *Neurochem Res*,** DOI: 10.1007/s11064-013-1058-4
17. Haseeb A Khan, Abdullah S Alhomida, Tamader Y Al Rammah, Samia H Sobki, **Mohammad S Ola**, Adnan A Khan (**2013)**. Alterations in prothrombin time and activated partial thromboplastin time in patients with acute myocardial infarction ***Int J Clin Exp Med*** ;6(4):294-297.
18. Khan HA, **M.Shamsul Ola**, Alhomida AS, Sobki SH, Khan SA (**2013**). [Evaluation of HbA1c criteria for diagnosis of diabetes mellitus: a retrospective study of 12 785 type 2 Saudi male patients.](http://www.ncbi.nlm.nih.gov/pubmed/24067131) **Endocr Res**. 25. PMID: 24067131
19. Haseeb A. Khan, Abdullah S. Alhomida, Syed Shahid Habib, Adnan A. Khan, **Mohammad S. Ola**, Nikhat J. Siddiqui, Samia H. Sobki, Halima Al Madani (**2014**) Blood carnitine as a biomarker for acute myocardial infarction. ***Biomedical Research****; 25 (1): 63-66*
20. **M. Shamsul Ola**, Abdulaziz M. Aleisa, Salim S. Al-Rejaie, Hatem M. Abuohashish, Mihir Y. Parmar, Abdullah S. Alhomida, Mohammed M. Ahmed (**2014**) Flavonoid, morin inhibits oxidative stress, inflammation and enhances neurotrophic support in the brain of streptozotocin-induced diabetic rats ***Neurological Sciences***. DOI 10.1007/s10072-014-1628-5
21. **M. Shamsul Ola** (**2014)** Effect of hyperglycemia on insulin receptor signaling in the cultured retinal Muller cells (Manuscript submitted) [**Biochem Biophys Res Commun.**](http://www.ncbi.nlm.nih.gov/pubmed/24462861)2014. DOI: 10.1016/j.bbrc.2014.01.052.
22. Abdulaziz M Aleisa, Salem S Al-Rejaie, Hatem M Abuohashish, **Mohammed S Ola**, Mihir Y Prmar and Mohammed M Ahmed (**2014**) Pretreatment of Gymnema sylvestre revealed the protection against acetic acid-induced ulcerative colitis in rats. **BMC Complementary and Alternative Medicine** 14:49.
23. **Mohammad Shamsul Ola** and Abdullah S. Alhomida (2014) Neurodegeneration in diabetic retina and its potential drug targets. **Current Neuropharmacology** 12; 4. 80-86.
24. **M**asoom Raza Siddiqui, Saikh Mohammad Wabaidur, Zeid A. Alothman, Moonis Ali Khan, and **Mohammad Shamsul Ola** (**2014**) Quantitative Assessment of Cefuroxime: A Second Generation Cephalosporin in Pharmaceutical Formulations and Spiked Plasma Using Ultra Performance Liquid Chromatography-Tandem Mass Spectrometry. **Asian Journal of Chemistry**; Vol. 26, No. 24, 8479-8482.
25. Amal J Fatani, Salim Salih Al‑Rejaie, Hatem M Abuohashish, Abdullah Al‑Assaf, Mihir Y Parmar, **Mohammad S Ola** and Mohammed M Ahmed (**2015**) Neuroprotective effects of Gymnema sylvestre on streptozotocin‑induced diabetic neuropathy in rats. **Experimental and Therapeutic Medicine**. 9(5):1670-1678.
26. M. Sajid Ali, H. A. Al-Lohedan, **M. Shamsul Ola**, A. M. Attaa (**2015**) Interaction of polyvinylthiol-functionalized silver nanoparticles with bovine serum albumin. **Digest Journal of Nanomaterials and Biostructures** Vol. 10, No. 1: 253 – 264.
27. **Mohammad Shamsul Ola**, Mohammed M. Ahmed, Rehan Ahmad, Hatem M. Abuohashish, Salim S. Al-Rejaie, Abdullah S. Alhomida (**2015**). Neuroprotective effects of rutin in streptozotocin-induced diabetic rat retina. **Journal of Molecular Neuroscience** 56(2):440-8.
28. MA Khan, ZA Al Othman, M Kumar, **Mohammad S Ola**, MR Siddique (**2015**) Biosorption potential assessment of modified pistachio shell waste for methylene blue: thermodynamics and kinetics study Desalination and Water Treatment 56 (1), 146-160.
29. Salem S Al-Rejaie, Abdulaziz M Aleisa, Hatem M Abuohashish, Mihir Y Prmar, **Mohammed S Ola**, and Mohammed M Ahmed (**2015**) Naringenin Neutralizes Oxidative Stress and Nerve Growth Factor Discrepancy in Experimental Diabetic Neuropathy. **Neurol Res**.37(10):924-33.
30. Masoom Raza Siddiqui, Saikh Mohammad Wabaidur, **Mohammad Shamsul Ola**, Zeid A. AlOthman, MZA Rafiquee (**2016**). High throughput UPLC-MS method for the determination of N-acetyl-L-cysteine: Application in tissue distribution study in Wistar rats; **Journal of Chromatographic Science;** doi: 10.1093/chromsci/bmw060
31. MZA Rafiquee, MR Siddiqui, HN Haque, **Mohammad S Ola**, HA, Al-Lohedan (**2016**). Activation of molecular oxygen for the oxidation of 2-mercaptoethanol: A kinetic and mechanistic approach. **Journal of Industrial and Engineering Chemistry** 34, 84-88.
32. Dalia Ibrahim Al-Dosary, Abdullah S. Alhomida, **Mohammad S. Ola** (**2016**).Protective effects of dietary flavonoids in diabetic induced retinal neurodegeneration. Current drug targets (In press).
33. **Mohammad Shamsul Ola**, Mohammed M. Ahmed, Salim S. Al-Rejaie, Abdullah S. Alhomida (**2016**). Neuroprotective effect of quercetin in diabetic rat retina (submitted)

**Book and book chapters**

1. **Editor of the book entitled, “Diabetic Retinopathy” ISBN:** ISBN 978-953-51-0044-7 **INTECH Publisher, published in February 2012.**
2. **Mohammad Shamsul Ola** and Nawaz MI (**2012**): Cellular and Molecular Mechanism of Diabetic Retinopathy. **Book Chapter by INTECH publisher.** ISBN 979-953-307-090-1.
3. **Mohammad Shamsul Ola and** Abdullah S. Alhomida (**2014**) Neurodegenerative Metabolites and Neuroprotective Strategies in Diabetic Retinopathy**. Book chapter Transworld Publisher, Recent Res Develop Neurochem 8,** ISBN:978-81-308-0542-9.
4. **Mohammad Shamsul Ola,** Haseeb A. Khan and Abdullah S. Alhomida. (**2015**) Role of diet and exercise in diabetic retinopathy, **Wiley Science Publisher, Chapter 10.** **SBN: 978-1-118-84055-9.**
5. **Mohammad Shamsul Ola and Haseeb Ahsan (2016);** Book entitled “Reactive oxygen species in Biology and Human Health” book chapter: Oxidative stress in Diabetic retinopathy. **Taylor & Francis Publisher; CRC press**
6. **Mohammad Shamsul Ola, M.I.Nawaz, Abdullah S.Alhomida (2016);** Book entitled “ Neuroprotective effects of phytochemicals in neurological disorders’ Book chapter: Effects of phytochemicals in diabetic neuro-retinopathy, **Wiley Science Publisher, Chapter 10. ISBN: 978-1-118-84055-9.**

**Published Abstracts:**

**M.Shamsul Ola** and Naheed Banu (1995). Studies on immobilized chymotrypsin using Seralose 4B as a support: Proceedings of the 64th Annual Meeting of the Society of Biological Chemists (India) held at Lucknow from October 6-8, 1995.

**M.Shamsul Ola** and Naheed Banu ( 1996). Studies on soluble lactose binding lectin from caprine brain: proceedings of the 65th Annual meeting of the Society of Biological Chemists (India) held at Bangalore from November 20-23, 1996.

**M.Shamsul Ola** and Naheed Banu (1997). Comparative study on galectin-1 from brain of three different mammals. *EJCB supplement* 46, Vol.74, A 90.

H.A.Naggar, **M.Shamsul Ola** , W.Wuang, P.Moore, C.C.Bridges, V.Ganapathy, S.B.Smith ( 2001). Hyperglycemic downregulation of reduced-folate transporter (RFT-1) in cultured ARPE-19 cells and diabetic mice*. Inves. Opthalmol. Vis.Sci*. 42: S502

S.B.Smith, C.C.Bridges, **M.Shamsul Ola**, A.El-Sherbeny, P.Prasad, V.Ganapathy, (2001). Regulation of the taurine transporter by nitric oxide in cultured human retinal pigment epithelial (RPE) cells*. Invest.Opthalmol.Vis.Sci*. 42: S502

**M.Shamsul Ola** , P.Moore, D.M.Maddox, A.El-Sherbeny, N.Agarwal , V.Ganapathy, S.B.Smith ( 2002). Sigma Receptor is expressed in the retinal ganglion cells under normal and diabetic conditions. *Invest.Opthalmol.Vis.Sci* 1326: B336

P.Moore, **M.Shamsul Ola**, N.Agarwal.V.Ganapathy, S.B.Smith (2002). Sigma receptor ligands prevent apoptotic retinal ganglion cell (RGC) death induced by homocysteine (Hcy) & glutamate (Glu). *Invest.Opthalmol.Vis.Sci* 749: B724.

S.B.Smith, P.N.Moore, **M.Shamsul Ola** , V.Ganapathy (2002). The sigma receptor ligand pentazocine prevents apoptotic retinal ganglion cell death induced in vitro by homocysteine and glutamate (Abstract no. 287) International Congress of Eye Research, Annual meeting, Geneva Switzerland, October, 2002.

**M.Shamsul Ola** and Sylvia B. Smith. xCT expression and regulation in retinal ganglion cells (RGC) treated with glutamate and homocysteine (Graduate Research day, 2002, Medical College of Georgia, Augusta, USA).

**M.Shamsul Ola**, Dennis.M.Maddox, Haseeb Ahsan,V.Ganapathy, S.B.Smith (2003)..

xCT expression and regulation in retinal ganglion cells (RGC-5) treated with glutamate. *Invest.Opthalmol.Vis.Sci.* 5208: B867.

S.B.Smith, **M.Shamsul Ola**, P.M.Martin, P.Ganapathy, H.Naggar, Y.-J.Fei, V.Ganapathy (2003). ATB0, + is a transporter for homocysteine (Hcy) in retinal cells. *Invest.Opthalmol.Vis.Sci.* 3442: B145

**M.Shamsul Ola**, Y.Xu, D.Berkich, K.LaNoue, I.Simpson(2004).Effect of Diabetes and

Hyperglycemia on Retinal Metabolism and Redox State *Invest.Opthalmol.Vis.Sci.* 3226: B861

Hutson SM, Sweatt AJ, Weiner J, Espinosa MAG, **M.Shamsul Ola**, Barber A, LaNoue KF (2004) Is there evidence for the metabolic theory of gabapentin action?

Journal of Neurochemistry 90: Suppl. 131

LaNoue KF, Barber A**, M.Shamsul Ola** , Xu Y, Hutson S (2004) Why the retinal Muller cells prefer glycolysis. Journal of Neurochemistry 90: Suppl. 1, 27

**M.Shamsul Ola**, A.Barber , K.-I.Hosoya, K.LaNoue (2005)Hydrocortisone Regulates the Expression of Glutamine Synthetase (GS) and Aspartate/Glutamate Carrier (AGC) in Cultured Rat Retinal Müller Cells (TR-MUL) *Invest.Opthalmol.Vis.Sci. 165*:B139

**M.Shamsul Ola**, D.A.Berkich, K.-I.Hosoya, K.LaNoue (2006) Regulation of glutamate metabolism by hydrocortisone and branched chain keto acids in cultured rat retinal Muller cells (TR-MUL) *Invest.Opthalmol.Vis.Sci.* 133:B5

G.I. Liou, **M.Shamsul Ola**, R.B. Caldwell, and A.B. El–Remessy (2006)  
**Neuroprotective Effects of Cannabidiol Involve Inhibition of Glutamine Synthetase Nitration in Diabetic Retina** Invest. Ophthalmol. Vis. Sci. 47: E-Abstract 4828.

Y. Khalifa, M. Al–Shabrawey, S. Mian, **M.Shamsul Ola**, R.B. Caldwell, and G.I. Liou  
**(2006) Endocannabinoid System Modulation of Glutamate Toxicity in Oxygen–Induced Retinopathy,** Invest. Ophthalmol. Vis. Sci. 47: E-Abstract 3221

K.LaNoue **M.Shamsul Ola**, T.W.Gardner (2006) Does hyperglycemia causes diabetic retinopathy? *Invest.Opthalmol.Vis.Sci.* 966:B887

Zhexi Ma, You-Ree Cho, **M Shamsul Ola**, Kathryn F LaNoue, Edward H Leiter and Jason Kim (2006) Nonobese But Hyperglycemic RCS10 Mice develop Insulin Resistance in skeletal Muscle and Liver. *American Diabetic Association* 66th Scientific Session. Abstract No. 950511.

Hwi Jin Ko, You-Ree Cho, Eun-Gyoung Hong, **M Shamsul Ola**, Kathryn F LaNoue, Alan Cheng, Alan R Saltiel and Jason K.Kim (2006) Mice with Heterozygous Deletion of PTG Develop Insulin Resistance in Heart and Liver. *American Diabetic Association* 66th Scientific Session. Abstract No. 950507.

S.M.Hutson, Y.Xu, J.Cole, A.Sweatt, **M.Shamsul Ola**, K.LaNoue (2006) Cell type distribution of the malate-aspartate shuttle: influence on brain glucose metabolism, *7th International Conference on Brain Energy Metabolism.* (15-18th August) Abstract No. 94

**M. S. Ola**, Yuping Xu, A. J. Barber and K.F.LaNoue (2007) Gabapentin ameliorates apoptosis of the diabetic retina *Invest.Opthalmol.Vis.Sci. 632:B89*

Zhiyou Zhang, Dae Young Jung, **M.Shamsul Ola**, Joel Linden, Kathryn F. LaNoue, and Jason K Kim (2007) Treatment with Adenosine A2B Receptor Antagonist Improves Insulin Sensitivity in Diabetic KKAy Mice. *American Diabetic Association* 67th Scientific Session.

K. LaNoue, D. Berkich, **M.Ola**, S.Hutson (2007) Reason for glial/neuronal lactate shuttle

*Neuron Glia Biology*, volume 3, S1:C76.

**M.S.Ola**, K.F. LaNoue (2008) Analysis of oxidative stress under in vivo conditions in diabetic rat retina Invest.Ophthalmol.Vis.Sci 5926:A300

LaNoue KF, **Ola MS**, Berkich DA, Carson V, Flanagan JM (**2009**) Measurements of equilibration between oxaloacetate and fumarate in awake rat brains3rd ISN Special Neurochemistry Conference/8th International Meeting on Brain Energy Metabolism**,** 2008 Beijing ChinaJOURNAL OF NEUROCHEMISTRYVolume:109Pages:290-290Published:2009

**Ola MS** and Kathryn LaNoue (**2010**) Analyses of oxidative stress in ex vivo diabetic rat retinal cells under hyperglycemic conditions 25th APAO congress, Beijing, China 2010.

**Ola MS** and Kathryn LaNoue (**2011**) Analysis of oxidative stress in diabetic rat retina and in cultured retinal cells under hyperglycemic conditions. Invest.Ophthalmol Vis Sci4450/A29

**Ola MS,** Imtiaz Nawaz and Ahmed Abu Al-Asrar (**2012**) Reduced Levels Of Brain Derived Neurotrophic Factor (bdnf) In The Serum Of Diabetic Retinopathy Patients And In The Retina Of Diabetic Rats Invest.Ophthalmol Vis Sci 5409/A502

**Ola MS,** Nawaz Mohd I, Abuohashish, Hatem M, Alhomaida Abdullah S, Al-Rejai Salim S, Ahmed Mohammed M **(2013**) Telmisartan increases the levels of brain derived neurotrophic factor and glutathione in the retina of streptozotocin-induced diabetic rats Invest.Ophthalmol Vis Sci 2694 - A0016

Shakir AlSharari, Amal Fatani, **Mohammad S. Ola**, Fatima Alrojayee and Abdulaziz A. Al-Hosaini (**2015**).The flavonoid, rutin, ameliorates neurodegeneration in the retina of diabetic rats. The Journal of Immunology, Vol: 194(1), 48.21

Rubino SM, Nae-AM, John V, Greven C, **Ola MS**, Ferrario CM and Ahmad S. (**2016**). Chymase/Angiotensin 1 axis: A pathway for angiotensin II generation in diabetic vitreous ARVO 2016.