




## University Faculty Details Page on DU Web-site

Title	Prof./Dr./Mr./Ms.	First Name	Anju	Last Name	Katyal	Photograph
Designation		Senior Assistant Professor				
Department		Dr B.R Ambedkar Center for Biomedical Research				
Address (Campus)		North Campus, University of Delhi, Delhi-110007				
(Residence)		C-99, Vivek Vihar phase 1, Delhi-110095				
Phone No (Campus)		011-27666272 ext242				
(Residence) optional		011-22145986				
Mobile		9868896567				
Fax						
Email		<a href="mailto:anju_katyal@yahoo.com">anju_katyal@yahoo.com</a>				
Web-Page						
Education						
Subject	Institution	Year	Details			
Ph. D. Parasite Immunology	Post Graduate Institute of Medical Education and Research, Chandigarh.	1993	<b>Thesis topic:</b> “ <i>Role of Calcium channel antagonists on the course of Plasmodium berghei infection and calcium status of immunocompetent cells in the infected animals</i> ” under the supervision of Prof. R. C. Mahajan, Department of Parasitology, Postgraduate Institute of Medical Education and Research (PGIMER) Chandigarh and Prof. N. K Ganguly, Ex-Director General of Indian Council of Medical Research (ICMR), New Delhi			
M. Sc.	M. D. University, Rohtak	1986	Subjects: Bio-Sciences			
B. Sc.	Panjab University	1983	Subjects: Zoology, Botany, Chemistry			

Career Profile			
Organisation / Institution	Designation	Duration	Role
Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi.	Senior Assistant Professor	August 2001 till date	Teaching , administrative responsibilities, research (details see curriculum vitae enclosed)
Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi.	Lecturer	Since May 1998 till August 2001	Teaching , administrative responsibilities, research (details see curriculum vitae enclosed)
Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi	Research Associate (CSIR)	October 1997-May 1998 (7 months, 27 days)	Research and other administrative responsibilities including the curriculum development for M. Sc in biomedical sciences course
Deptt. of Zoology, Miranda House, University of Delhi	Lecturer (Ad-hoc+ part time)	October 1995 to April 1996 (04 months 04 days)	Teaching B. Sc. (H) Zoology courses
Research Interests / Specialization			
<p>Research Interest – Immunopathogenesis</p> <p>My research unit conducts an integrated analysis of factors that condition the outcome of various disease manifestations like cerebral malaria, cerebral ischemia, cerebral hypoxia. Most of the neurodegeneration conditions are mediated by multiple pathways such as oxidative stress apoptosis, inflammatory mediators etc. The four main axis of analysis are the relative contribution of the known intrinsic and extrinsic markers of apoptotic, cytokines involved, exploration of oxidant-antioxidant relationships, and iNOS-hemeoxygenase modulation during these disease conditions. The unit's long term objective is to explore the critical markers of pathogenesis of these diseases. So that effective treatment strategies can be evolved.</p>			

### **Mechanism of pathogenesis during cerebral ischemia/cerebral hypoxia**

I am presently investigating the differential vulnerability of various brain regions like cortex, hippocampus and striatum to cerebral hypoxia/ischemia. The neuronal deaths during such conditions are found to be in delayed fashion (Delayed Neuronal Death) and are characteristically apoptotic; the reason behind this is a mystery. Moreover the neuronal death induced during degenerative disorders is progressive in nature, which leads to fatal consequences. In my experimental studies I am trying to find out the various major pathways involved in the neuronal death namely

- Free radicals pathway:
- Apoptotic pathway:
- Inflammation pathway:

*Behavioral Brain Research*, 2008,192 (2): 178-184

*Brain Research*, Volume 1230 C, 2008, pages 138-149.

*Neuroscience*, 155 (3), 2008, 626 – 639.

### **Mechanism of Th2 cytokines and IgE mediated pathogenesis during cerebral malaria condition.**

Currently active projects are aimed at estimating the Th1 and Th2 cytokines and various other molecules proposed to be associated with pathogenesis of cerebral malaria in relation to parasite load in mouse model. In addition levels of cytokines, various apoptotic markers are being studied at different parasitemia levels to understand the mechanism of pathogenesis in relation to parasite load. The study may help to decipher the host parasite relationships in final outcome of cerebral malaria pathogenesis at molecular level.

### **Role of Calcium antagonists in malaria infection-*host parasite relationships***

We have developed a mouse model to study whether the calcium channel blockers (CCB), the widely used cardiovascular drugs have any effect on the disease course of malaria. We observed that the infection was more severe when the mice with steady state levels of CCB were infected with malaria. Further studies were done to estimate the Th-1/Th-2 and gamma delta T cell subsets in spleens and peripheral blood of these animals as compared with controls. CD8/gamma-delta T-lymphocytes showed an inverse relationship during the course of infection, which was in contrast to the control response. Further work is going on to study the pattern of Th1/ Th2 cytokines during the course of infection. *APMIS* 2007 (115): 911-20.

### **Characterization of neo- antigens involved in pathogenesis of alcoholic liver disease**

We have developed an animal model for alcoholic liver disease to characterize the antigens involved in pathogenesis and longitudinal progression of disease. Grading of the pathological conditions and marker enzymes in liver were documented the progression of the disease in wistar rats through all the four stages as observed in human subjects. Further work is going on to fractionate the specific antigen which elicits the maximum immune response in animals leading to pathological conditions. The immunogenic antigens are being characterized and their relative contribution in progression of disease is being investigated. In addition we are pursuing an alternative strategy for identifying the putative immunogenic proteins based on the available microarray data.

### **Gene activation by hairpin triplex forming oligonucleotides constructs**

In addition we are trying to work out a novel method of gene activation by hairpin triplex forming oligonucleotides constructs. For this appropriate gene in *S. Cerevisiae* has been identified and hairpin triplex forming oligonucleotide hybrid sequences for the recruitment of activator has been constructed. When transfected in *S. cerevisiae* these construct could form triplex in- vivo and in turn recruit transcription factors to activate SP gene to almost 10 fold higher than the basal level of expression. This has been substantiated by in - vitro studies.

*Journal of Biomolecular Structure and Design, 2002, 20: 265-274*

*Molecular and Cellular Biochemistry, 2005, 278: 147-155.*

Further work is being carried out to establish this approach as a novel technique, which can be used in basic research in gene regulation as well as its possible application in gene therapy.

### **Toxicological studies on Noscapine: an opium alkaloid**

As a part of co-ordinate efforts at ACBR to develop and characterize anti cancer drugs from an opium alkaloid we studied the immunotoxicity and cardiotoxicity of these alkaloids and their derivatives and found out that one of the alkaloids is a potent histamine releaser. Its administration leads to significant depression of blood pressure. Further work is going on to study the mechanism of action of these alkaloids.

*Eur. J. Drug Met. Pharmacokin., 2004, 29, 1, 31-36.*

*Eur. J. Drug Met. Pharmacokin., 2004, 29, 3, 153-000.*

**Implications of modulation of hemeoxygenase in oxidative stress induced by hypobaric hypoxia (ICMR SPONSORED PROJECT):**

The physiochemical responses to hypobaric hypoxia involved intricate relationship between cardiorespiratory adaptations at organ level and oxidant-antioxidant status of the cell. The net injury to the affected organs is closely dependent on the maintenance of the antioxidant status of the cell. We are trying to evaluate the role of hemeoxygenase in maintaining the antioxidant status of the cells during hypobaric hypoxia conditions by intervention within known hemeoxygenase modulators (Metalloporphyrins). The effect on physiological functions is being further studied.

Teaching Experience ( Subjects/Courses Taught)

B.Sc. (Hons) Zoology-Medical Entomology, Physiology, Invertebrates

M. Sc. Biomedical Sciences

- Course Coordinator and teaching Medical Microbiology, from 1999 to till date (including practicals )
- Course Coordinator and teaching Immunology, from 1999 to till date (including practicals ).
- Course Coordinator from 2007 to 2010 and teaching Advanced course in Immunology from 2007 till Date
- Course Coordinator, Physiology, from 1998 to till 2008 (Teaching and Practicals in physiology in 1998-2000).
- Course Coordinator, Advanced Human Physiology, from 1998 till 2008.
- Course Coordinator, Medical toxicology, from 1999 to 2004.
- Principal Investigator,CATCH THEM YOUNG, CSIR, 2010-2013
- Co-ordinator, PRE NET COACHING(Life Science), Delhi University, 2017

## Honors & Awards

- Reviewer of an International Journal "**Brain Research**"
- Reviewer of an International Journal "**Neuroscience**"
- Reviewer of an International Journal "**Journal of Toxicology and Teratology**".
- Reviewer of **Indian Journal of Medical Research** (IJMR).
- Reviewer of International Journal " **Journal of public health and Epidemiology.**"
- Reviewer of International Journal "**Medicinal Research Reviews**"
- Visiting Scientist, Department of Biology, Georgia State University, Georgia Atlanta,USA 15<sup>th</sup> September-15<sup>th</sup> November,2012
- Invited to deliver a lecture at symposium "Legacy of Nitric Oxide" to commemorate 100 years of nitric oxide
- Selected to attend the workshop organized under Supporting Educational Programs in India (SEPI) sponsored by ALO/ USAID at Houston Community College in June 2000
- DST Young Scientist award(Ref No HR/OY/GB-20/97 dated 24-08-98)
- Senior Research Fellow(CSIR) at Department of Parasitology, PGIME&R, Chandigarh January 1991 .
- Indian Immunological society, Life member 2000
- Indian association of Medical microbiologists, Life member 1989
- Indian Academy of Neuroscience, Life Member 2012
- Society for Neurochemistry, Life Member 2013

## Publications (LAST FIVE YEARS)

## In Indexed/ Peer Reviewed Journals

<b>2017</b>	Biochemical characterization of unusual cysteine protease of <i>P. falciparum</i> , metacaspase-2 (MCA-2).	Mol Biochem Parasitol. 2018 Mar;220:28-41.	Vandana, Singh AP, Singh J, Sharma R, Akhter M, Mishra PK, Saxena AK, Dixit R, Rathi B, <b>Katyal A</b> , Pandey KC
<b>2017</b>	Inhibition of 12/15 LOX ameliorates cognitive and cholinergic dysfunction in mouse model of hypobaric hypoxia via. attenuation of oxidative/nitrosative stress.	Neuroscience. 2017 Sep 17;359:308-324.	Choudhary R, Malairaman U, <b>Katyal A</b> .
<b>2017</b>	Sterically stabilized gelatin microassemblies of noscapine enhance cytotoxicity, apoptosis and drug delivery in lung cancer cells	Colloids Surf B Biointerfaces. 1;107:235-44	Madan J1, Pandey RS, Jain UK, Katare OP, Aneja R, <b>Katyal A</b> .
<b>2016</b>	Myeloperoxidase: Bridging the gap in neurodegeneration	Neuroscience and Biobehavioral Reviews 68 (2016) 611–620	R.S. Ray, <b>Anju Katyal</b> .
<b>2016</b>	Protamine coated proliposomes of recombinant human insulin encased in Eudragit S100 coated capsule offered improved peptide delivery and permeation across Caco-2 cells.	Mater Sci Eng C Mater Biol Appl. 2016 ,1; 67:378-85.	Sharma S1, Jyoti K1, Sinha R2, Katyal A2, Jain UK1, Madan J3.
<b>2016</b>	Tetanus toxoid-loaded cationic non-aggregated nanostructured lipid particles triggered strong humoral and cellular immune responses	J.Microencapsul. 2016 May;33(3):263-73.	Kaur A, Jyoti K, Rai S, Sidhu R, Pandey RS, Jain UK, <b>Katyal A</b> , Madan J.

<b>2015</b>	Chemical sympathectomy restores baroreceptor-heart rate reflex and heart rate variability in rats with chronic nitric oxide deficiency	Physiol Res. 2015;64(4):459-66	Chaswal M, Das S, Prasad J, <b>Katyal A,</b> Fahim M. Kaur K, Sodhi RK, <b>Katyal A,</b> Aneja R, Jain UK, Katare OP, Madan J
<b>2015</b>	Wheat germ agglutinin anchored chitosan microspheres of reduced brominated derivative of noscapine ameliorated acute inflammation in experimental colitis	Colloids Surf B Biointerfaces. 2015 Aug 1;132:225-35	Dixit N, Vaibhav K, Pandey RS, Jain UK, Katare OP, <b>Katyal A,</b> Madan J Udayabanu Malairaman, Kumaran Dandapani,
<b>2015</b>	Improved cisplatin delivery in cervical cancer cells by utilizing folate-grafted non-aggregated gelatin nanoparticles	Biomed Pharmacother. 2015 Feb;69:1-10	<b>Anju Katyal</b> R.S. Ray, S. Rai, <b>A. Katyal</b>
<b>2014</b>	Effect of Ca <sub>2</sub> EDTA on Zinc mediated inflammation and neuronal apoptosis in Hippocampus of an in vivo mouse model of hypobaric hypoxia	PlosOne 2014 ,9(10) ,e 110253	Krishan Chander et al., <b>Anju Katyal,</b> Fakhrul Islam, M Saeed Siddiqui.
<b>2014</b>	Cholinergic receptor blockade by scopolamine and mecamlamine exacerbates global cerebral ischemia induced memory dysfunction in C57BL/6J mice	Nitric Oxide 2014, 43 ,62-73	
<b>2014</b>	Quercetin mitigates lead acetate induced behavioural and histological alterations 2014 via suppression of oxidative stress, Hsp 70, Bak and upregulation of Bcl-2.	Food Chem Toxicol. 2014 .68,297-306	



<b>2014</b>	Enhanced noscapine delivery using estrogen-receptor targeted nanoparticles for breast cancer therapy. Anticancer Drugs.	Anticancer Drugs. <b>2014</b> , 25(6), 704-716.	Jitender Madan et al.  <b>Anju Katyal</b> ,  Upendra Kumar Jain
<b>2014</b>	Sustained-release protamine sulphate-impregnated microspheres may reduce the frequent administration of recombinant interferon $\alpha$ -2b in ovarian cancer: in-vitro characterization	Anticancer Drugs. <b>2014</b> Jan; 25(1):63-71	Gulia M, Rai S, Jain UK, Katare OP,  <b>Katyal A</b> , Madan J.
<b>2013</b>	Sterically stabilized gelatin microassemblies of noscapine enhance cytotoxicity, apoptosis and drug delivery in lung cancer cells.	Colloids Surf B Biointerfaces. <b>2013</b> Jul 1; 107:235-44	Madan J, Pandey RS,  Jain UK, Katare OP,  Aneja R,  <b>Katyal A</b> .
<b>2013</b>	Poly (ethylene)-glycol conjugated solid lipid nanoparticles of noscapine improve biological half-life, brain delivery and efficacy in glioblastoma cells	Nanomedicine. <b>2013</b> May; 9(4):492-503	Madan J, Pandey RS,  Jain V, Katare OP,  Chandra R, <b>Katyal A</b> .
<b>2012</b>	Immunoproteomic identification of biotransformed self-proteins from the livers of female Balb/c mice following chronic ethanol administration. Proteomics	Proteomics. <b>2012</b> Jun; 12(12):2036-44	Kaur I,  <b>Katyal A</b> .
<b>2012</b>	Galactosylated gelatin nanovectors of doxorubicin inhibit cell proliferation and induce apoptosis in hepatocarcinoma cells	Anticancer Drugs. 2012 Sep; 23(8):836-45	Garg M, Madan J, Pandey RS, Sardana S,  <b>Katyal A</b> , Chandra R.

<b>2012</b>	Free chelatable zinc modulates the cholinergic function during hypobaric hypoxia-induced neuronal damage: An in vivo study <i>Neuroscience</i>	Neuroscience 2012 , 202 , pp. 434-445	Udayabanu, M., Kumaran, D., <b>Katyal, A</b>
<b>2012</b>	Effect of Losartan , an angiotensin II type J receptor anatagonist on cardiac autonomic function of rats during acute and chronic inhibition of Nitric oxide synthesis.	Physiological Reasearch 2012 ,61,135-144.	Chaswal, M., Das, S., Prasad, J., <b>Katyal A.</b> , Kumar A, ,Fahim

#### Conference Presentations

- Evaluation of neuroprotective effects of *hypericum perforatum* extract in mouse model of global cerebral ischemia. 7th International Conference on Biochemical Markers for Brain Damage. Lund, Sweden. September 14-16 2015.
- Regulating Cholinergic functions : A useful tool to control Neuroinflammatory responses in GCI/R injury Invited speaker and chaired a session on Lifestyle disorders in 102<sup>nd</sup> Indian Science congress held by University of Mumbai ,1<sup>st</sup> -7<sup>th</sup> January,2015
- Alcohol Liver Disease pathogenesis : contribution of Gut-Liver axis Invited speaker in Faculty development programme held at Chandigarh College of Pharmacy,Mohali, 10<sup>th</sup>-14<sup>th</sup> June 2014
- Oral Presentation Identification of immunogenic proteins following chronic alcohol administration in mice. First International conference on Biotechnology, Bioinformatics and Bioengineering held at Tirupati, Andhra Pradesh, 28<sup>th</sup> -29<sup>th</sup> June **2013**.
- Poster Presentation in 27<sup>th</sup> Annual Meeting of Society for Neurochemistry, SNCI and International conference on Recent advances in molecular mechanisms of neurological Disorders. AIIMS, New Delhi, 21<sup>st</sup> -23<sup>rd</sup> Feb **2013**.

- 32<sup>nd</sup> Annual convention Indian Association of Cancer Research, IACR, ACBR, University of Delhi, Delhi 13<sup>th</sup> -16<sup>th</sup> Feb **2013**
- Poster Presentation in 19<sup>th</sup> Biennial Meeting of the International Society for Developmental Neurosciences ISDN. 11<sup>th</sup> -14<sup>th</sup> Jan **2012**
- Alcohol and Gut Liver Interactions in Development of alcoholic liver disease. Refresher Course in Life Sciences, 2011

Total Publication Profile [optional](#)

Books

In Indexed/ Peer Reviewed Journals

No. of published paper in International Journal: 59

Total Citations as per google citations (1996- June 2017): 1137

H Index: 19

- Vandana, Singh AP, Singh J, Sharma R, Akhter M, Mishra PK, Saxena AK, Dixit R, Rathi B, Katyal A, Pandey KC Biochemical characterization of unusual cysteine protease of *P. falciparum*, metacaspase-2 (MCA-2). *Mol Biochem Parasitol.* 2017;220:28-41. **Impact Factor 2.536**
- Choudhary R, Malairaman U, Katyal A. Inhibition of 12/15 LOX ameliorates cognitive and cholinergic dysfunction in mouse model of hypobaric hypoxia via. attenuation of oxidative/nitrosative stress. *2017 Neuroscience.* 2017;359:308-324. **Impact Factor 3.327**
- Madan J1, Pandey RS, Jain UK, Katare OP, Aneja R, Katyal A. Sterically stabilized gelatin microassemblies of noscipine enhance cytotoxicity, apoptosis and drug delivery in lung cancer cells. *Colloids Surf B Biointerfaces.* 2017; 1;107:235-44 **Impact Factor 3.887**
- R.S. Ray, Anju Katyal. Myeloperoxidase: Bridging the gap in neurodegeneration. *Neuroscience and Biobehavioral Reviews* 68 (2016) 611–620. **Impact Factor : 10.504.**
- Sharma S, Jyoti K, Sinha R, Katyal A, Jain UK, Madan J. Protamine coated proliposomes of recombinant human insulin encased in Eudragit S100 coated capsule offered improved peptide delivery and permeation across Caco-2 cells. *Mater Sci Eng C Mater Biol Appl.* 2016,1;67:378-85. **Impact Factor 3.420**
- Kaur A, Jyoti K, Rai S, Sidhu R, Pandey RS, Jain UK, **Katyal A**, Madan J. Tetanus toxoid-loaded cationic non-aggregated nanostructured lipid particles triggered strong humoral and cellular immune responses. *J Microencapsul.* 2016 May;33(3):263-73. **Impact Factor: 1.585**
- Chaswal M, Das S, Prasad J, **Katyal A**, Fahim M. Chemical sympathectomy restores baroreceptor-heart rate reflex and heart rate variability in rats with chronic nitric oxide deficiency. *Physiol Res.* 2015;64(4):459-66.
- Kaur K, Sodhi RK, **Katyal A**, Aneja R, Jain UK, Katare OP, Madan J. Wheat germ agglutinin anchored chitosan microspheres of reduced brominated derivative of noscipine ameliorated acute inflammation in experimental colitis. *Colloids Surf B Biointerfaces.* 2015 Aug 1;132:225-35. **Impact Factor: 4.152**
- Dixit N, Vaibhav K, Pandey RS, Jain UK, Katare OP, **Katyal A**, Madan J. Improved cisplatin delivery in cervical cancer cells by utilizing folate-grafted non-aggregated gelatin nanoparticles. *Biomed Pharmacother.* 2015 Feb;69:1-10. **Impact factor: 2.023**
- Udayabanu Malairaman, Kumaran Dandapani, **Anju Katyal**. Effect of Ca<sub>2</sub>EDTA on Zinc mediated inflammation and neuronal apoptosis in Hippocampus of an in vivo mouse model of hypobaric hypoxia. *PlosOne* 2014 ,9(10) ,e 110253. **Impact factor 4.25.**

- R.S. Ray, S. Rai, **A. Katyal**. Cholinergic receptor blockade by scopolamine and mecamlamine exacerbates global cerebral ischemia induced memory dysfunction in C57BL/6J mice. *Nitric Oxide* 2014, 43 ,62-73 .**Impact factor 3.5**
- Krishan Chander, Kumar Vaibhav, Md. Ejaz Ahmed, Hayate Javed, Rizwana Tabassum, Andleeb Khan, Mukesh Kumar, **Anju Katyal**, Fakhrul Islam, M Saeed Siddiqui. Quercetin mitigates lead acetate induced behavioural and histological alterations via suppression of oxidative stress, Hsp 70, Bak and upregulation of Bcl-2. *Food Chem Toxicol.* 2014 .68,297-306. **Impact factor:** 3.2
- Jitender Madan,Sushma R. Gundala, Yoganjaneyulu Kasetti, Prasad V. Bharatam, Ritu Aneja, **Anju Katyal** , Upendra Kumar Jain. Enhanced noscapine delivery using estrogen-receptor targeted nanoparticles for breast cancer therapy. *Anticancer Drugs.*2014 ,25(6),704-716. **Impact factor:** 2.232
- Gulia M, Rai S, Jain UK, Katare OP, **Katyal A**, Madan J. Sustained-release protamine sulphate-impregnated microspheres may reduce the frequent administration of recombinant interferon  $\alpha$ -2b in ovarian cancer: in-vitro characterization. *Anticancer Drugs.* 2014 Jan;25(1):63-71. **Impact factor:** 2.232
- Madan J, Pandey RS, Jain UK, Katare OP, Aneja R, **Katyal A**. Sterically stabilized gelatin microassemblies of noscapine enhance cytotoxicity, apoptosis and drug delivery in lung cancer cells. *Colloids Surf B Biointerfaces.* 2013 Jul 1;107:235-44. **Impact factor:** 3.554
- Madan J, Pandey RS, Jain V, Katare OP, Chandra R, **Katyal A**. Poly (ethylene)-glycol conjugated solid lipid nanoparticles of noscapine improve biological half-life, brain delivery and efficacy in glioblastoma cells. *Nanomedicine.* 2013 May;9(4):492-503. **Impact factor:** 6.930
- Kaur I, **Katyal A**. Immunoproteomic identification of biotransformed self-proteins from the livers of female Balb/c mice following chronic ethanol administration.*Proteomics.* 2012 Jun;12(12):2036-44. **Impact factor:** 4.132
- Garg M, Madan J, Pandey RS, Sardana S, **Katyal A**, Chandra R. Galactosylated gelatin nanovectors of doxorubicin inhibit cell proliferation and induce apoptosis in hepatocarcinoma cells. *Anticancer Drugs.* 2012 Sep;23(8):836-45. **Impact factor:** 2.23
- Udayabanu, M., Kumaran, D., **Katyal, A** .Free chelatable zinc modulates the cholinergic function during hypobaric hypoxia-induced neuronal damage: An in vivo study *Neuroscience* 2012 , 202 , pp. 434-445 **Impact factor:** 3.389
- Chaswal, M., Das, S., Prasad, J., **Katyal A.**, Kumar A, ,Fahim, M. Effect of Losartan , an angiotensin II type J receptor anatagonist on cardiac autonomic function of rats during acute and chronic inhibition of Nitric oxide synthesis. *Physiological Reasearch* 2012 ,61,135-144. **Impact factor:** 1.646
- Chaswal, M., Das, S., Prasad, J., **Katyal, A.**,Fahim, M.Cardiac autonomic function in acutely nitric oxide deficient hypertensive rats: Role of the sympathetic nervous system and oxidative stress *Canadian Journal of Physiology and Pharmacology* 2011, 89 (12) , pp. 865-874 **Impact factor:** 1.56
- Singh, P., Kumari, K., Tomar, V., Samim, M., Patel, R., Mehrotra, G.K., Dubey, M.,**Katyal, A**. A novel method to chemically bind thiazolidine-2,4-dione through cross-linked chitosan

nanoparticles using malanodialdehyde as a cross-linker *Canadian Journal of Chemistry* **2011**, 89 (11) , pp. 1332-1342 **Impact factor: 0.96**

- Madan, J., Dhiman, N., Sardana, S., Aneja, R., Chandra, R., **Katyal A.** A Long-circulating poly(ethylene glycol)-grafted gelatin nanoparticles customized for intracellular delivery of noscapine: Preparation, in-vitro characterization, structure elucidation, pharmacokinetics, and cytotoxicity analyses *Anti-Cancer Drugs* **2011**, 22 (6) , pp. 543-555. **Impact factor: 2.232**
- Balachandar, S., **Katyal, A.** Peroxisome proliferator activating receptor (PPAR) in cerebral malaria (CM): A novel target for an additional therapy *European Journal of Clinical Microbiology and Infectious Diseases* **2011** 30 (4) , pp. 483-498. **Impact factor: 3.024**
- Kaur, I., **Katyal, A.** Modification of mouse A2M B (620-792) and A2M N (168-230) by malondialdehyde and acetaldehyde attenuates the proteinase and TGF- $\beta$ 1 binding ability of A2MB *FEBS Letters* **2011** 585 (6) , pp. 829-833. **Impact factor: 3.582**
- Singh B, Sharma GL, Oellerich M, Kumar R, Singh S, Bhadoria DP, **Katyal A**, Reichard U, Asif AR Novel cytosolic allergens of *Aspergillus fumigatus* identified from germinating conidia. *J Proteome Res.* **2010** Nov 5;9(11):5530-41. **Impact factor: 5.056.**
- Jitender Madan, Neerupma Dhiman, Vinod. K. Parmar, Satish Sardana, Prasad V. Bharatam, Ritu Aneja, Ramesh Chandra, **Anju Katyal.** Inclusion complexes of noscapine in betacyclodextrin offer better solubility and improved pharmacokinetics. *Cancer Chemotherapy and Pharmacology* **2010**, 65(3):537-48. **Impact Factor: 2.80**
- Prashant Singh, Pradeep Kumar, **Anju Katyal** et al. Phosphotungstic Acid : An Efficient Catalyst for the Aqueous Phase Synthesis of Bis-(4 Hydroxycoumarins-3yl) methanes. *Catalysis Letters* **2010** ,134:303–308. **Impact Factor: 2.24**
- Prashant Singh, Pradeep Kumar, **Anju Katyal** et al Synthesis and electrochemical studies on charge-transfer complexes of thiazolidine-2,4-dione with sigma and pi acceptors. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* **75,2010** 983-991. **Impact Factor: 1.977.**
- Mirza Irfan Beig, Anita Talwar, Ramesh Chandra, Mohammad Fahim, **Anju Katyal.** Epileptic seizure-induced hypertension and its prevention by calcium channel blockers-a realtime study in conscious telemetered rats. *Canadian Journal of Physiology and Pharmacology*, **2009** ,87:1-9. **Impact Factor:1.858**
- Prashant Singh, **Anju Katyal** and Ramesh Chandra .Cu Nanoparticles in Ionic Liquid: An Easy and Efficient Catalyst for Addition–Elimination Reaction between Active Methylene Compounds and Imines in an Ionic Liquid. . *Catalysis Letters*, **2009** ,130:648-654. . **Impact Factor:2.24.**
- Prashant Singh, **Anju Katyal**, Ramesh Chandra .Synthesis and characterization of silver and gold nanoparticles in ionic liquid. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*.**2009**, Volume 73, Issue 1: 218-220. **Impact Factor:1.977**
- Prashant Singh, **Anju Katyal** and Ramesh Chandra .Copper Nanoparticles in Ionic Liquid: An Easy and Efficient Catalyst for Selective Carbylamine Reaction. . *Catalysis Letters*. **2009**, Volume 127, Numbers 1-2 . **Impact Factor:2.24.**
- Monika Jain, L. Ganju, **Anju Katyal**, Y. Padwad, K.P. Mishra, S. Chanda, D. Karan K.M.S. Yogendra and R.C. Sawhney. Effect of *Hippophae rhamnoides* leaf extract against Dengue virus infection in human blood-derived macrophages. *Phytomedicine*. **2008** , 15(10):793-9. **Impact Factor:3.258.**

- D. Kumaran, M. Udayabanu, Mayank Kumar, Aneja R, **Anju Katyal**. Involvement of Angiotensin Converting Enzyme in Cerebral Hypoperfusion Induced Anterograde Memory Impairment and Cholinergic Dysfunction in Rats. *Neuroscience*, **2008**,155 (3) : 626 – 639. **Impact Factor**:3.480.
- M.Udayabanu, D. Kumaran, R. Unnikrishnan Nair, P. Srinivas, Neeta Bhagat, Aneja R, **Anju Katyal**. Nitric oxide associated with iNOS expression inhibits acetylcholinesterase activity and induces memory impairment during acute hypobaric hypoxia. *Brain Research*, **2008** , 1230C: 138-149. **Impact Factor**: 2.879.
- D. Kumaran, M. Udayabanu, R. Unnikrishnan Nair, Aneja R, **Anju Katyal**. Benzamide protects delayed neuronal death and behavioural impairment in a mouse model of global cerebral ischemia. *Behavioural Brain Research*, **2008**,192 (2): 178-184. **Impact Factor**: 3.674.
- Prashant Singh, **Anju Katyal**, Ramesh Chandra.A novel route for the synthesis of indium nanoparticles in ionic liquid *Materials Letters*, **2008** , 62(25) 4164-4166. **Impact Factor**: 2.194.
- Prashant Singh, **Anju Katyal**, Ramesh Chandra. Copper nanoparticles in ionic liquid: An easy and efficient catalyst for the coupling of thiazolidine-2, 4-dione, aromatic aldehyde and ammonium acetate *Catalysis Communications*, **2008**,9(7): 1618-1623. **Impact Factor**: 2.915.
- Prashant Singh, **Anju Katyal**, Ramesh Chandra. Copper nanoparticles in an ionic liquid: an efficient catalyst for the synthesis of bis-(4-hydroxy-2-oxothiazolyl) methanes. *Tetrahedron Letters*, **2008** ,49(4): 727-730. **Impact Factor**: 2.397.
- Moshal KS, Adhikari JS, Bist K, Nair U, Dwarakanath BS, **Katyal Anju**, Chandra R. Calcium channel antagonist (nifedipine) attenuates *Plasmodium berghei*-specific T cell immune responses in Balb/c mice. *APMIS* **2007** ,115(8):911-20. **Impact Factor**: 2.068.
- Yadav V, Mandhan R, Pasha Q, Pasha S, **Katyal Anju**, Chhillar AK, Gupta J, Dabur R, Sharma GL. An antifungal protein from *Escherichia coli*. *J Med Microbiol* **2007** , 56:637-44. **Impact Factor**: 2.38.
- Mirza Irfan Beig, Neeta Bhagat, Anita Talwar, Ramesh Chandra, Mohammad Fahim, **Anju Katyal**. Simultaneous recording of electroencephalogram and blood pressure in conscious telemetered rats during ictal state. *Journal of Pharmacological and Toxicological Methods*, **2007** , 56(1) :51-57. **Impact Factor**: 2.150.
- Suraksha Sachdeva, Asif Mohmmmed, Palakodeti V.N. Dasaradhi, Brendan S. Crabb, **Anju Katyal**, Pawan Malhotra, Virander S. Chauhan. Immunogenicity and protective efficacy of *Escherichia coli* expressed *Plasmodium falciparum* merozoite surface protein-142 using human compatible adjuvants. *Vaccine*, **2006** , 24(12): 2007-2016. **Impact Factor**: 3.674.
- Mrinal Kanti Ghosh, **Anju Katyal**, Ramesh Chandra and Vani Brahmachari. Targeted activation of transcription in vivo through hairpin-triplex forming oligonucleotide in *Saccharomyces cerevisiae*. *Molecular and Cellular Biochemistry*, **2005** , 278:147-155. 1.764. **Impact Factor**: 2.168.
- Ritu Aneja, **Anju Katyal**, Sujata K.Dass and Ramesh Chandra Modulatory influence of noscapiene on the ethanol-altered hepatic biotransformation system enzymes, glutathione content and lipid peroxidation in vivo in rats. *Eur J Drug Met Pharmacokinetics*, **2004** , (3):153-000. **Impact Factor**: 0.353
- Ritu Aneja, **Anju Katyal** and Ramesh Chandra. Stimulation of lipid peroxidation and impairment of glutathione-dependent defense system in wistar rats treated with cryptopine, a rare non-narcotic opium alkaloid. *Eur J Drug Met Pharmacokinetics*, **2004** , 29(1):31-36. **Impact Factor**: 0.944

- Sheenu Mathur, Parvinder Kaur, Meenakshi Sharma, Bharat Singh, **Anju Katyal**, Manisha Tiwari and Ramesh Chandra. The treatment of skin carcinoma, induced by UVB radiation, using 1-oxo-5-beta-, 6 beta-epoxy-with  $\alpha$ -2-enolide, isolated from the roots of *Withania somnifera*, in a rat model. *Phytomedicine*, **2004**, 11(5): 1-9. **Impact Factor:** 3.258.
- Mrinal Kanti Ghosh, **Anju Katyal**, Vani Brahamachari & Ramesh Chandra. Design and Structural analysis of hairpin-TFO for transcription activation of genes in *S. cerevisiae*” *Journal of Biomolecular Structure and Dynamics*, **2002**, 20: 265-274. **Impact Factor:** 4.986
- **Kalra Anju**, Dubey ML, Ganguly NK, Mahajan RC. Effect of nifedipine on calcium status and chemiluminescence response of phagocytes during *Plasmodium berghei* infection in mice. *J Pharm Pharmacol* ,**1993**, 45(6):540-544. **Impact Factor:** 1.847.
- **Kalra Anju**, Dubey ML, Ganguly NK, Mohan K, Mahajan RC. Altered course of *Plasmodium berghei* infection by nifedipine treatment. *APMIS* ,**1993** ,101(9):667-71. **Impact Factor:** 2.068.
- Mohan K, Dubey ML, Ganguly NK, **Kalra Anju**, Mahajan RC. Effect of nifedipine on oxidative damage of erythrocytes in *Plasmodium berghei*-infected mice. *Clin Immunol Immunopathol* ,**1993**, 69(2):244-247. (now: *Clinical immunology*) **Impact Factor:** 3.932.
- **Kalra Anju**, Dubey ML, Ganguly NK, Mohan K, Mahajan RC. Effect of nifedipine treatment on oxidative metabolism of peritoneal macrophages and neutrophils of *Plasmodium berghei*-infected mice. *Exp Parasitol* ,**1992**,74(1):20-26. **Impact Factor:**1.869.
- Jayshree RS, Ganguly NK, **Anju Kalra**, Sethi A, Mahajan RC. Oxidative metabolic response of peripheral blood monocytes of monkeys during primary and chronic *Plasmodium knowlesi* infection. *APMIS*,**1991**,99(1):10-14. **Impact Factor:** 1.944.
- Dubey ML, Rai SK, Ganguly NK, **Kalra Anju**, Varma SC, Mahajan RC. Generation of reactive oxygen species by blood monocytes in human *Plasmodium falciparum* and *P. vivax* infections. *APMIS* ,**1991**,99(3):210-212. **Impact Factor:** 2.068.
- Choudhury NJ, Dubey ML, Jolly JG, **Kalra Anju**, Mahajan RC, Ganguly NK. Post transfusion malaria in thalassaemia patients. *BLUT*, **1990**, 61(5):314-316. **Impact Factor:** 2.454.
- N.J Choudhury, M.L.Dubey ,J.G. Jolly, **Anju Kalra** ,R.C Mahajan N.K.Ganguly. Antimalarial antibody profile of thalassamia patients *Ind. J. Med. Microbiol*, **1989**,7: 174-176. **Impact Factor:**2.38
- Choudhury N, Jolly JG, Mahajan RC, Dubey ML, **Kalra Anju**, Ganguly NK. Selection of blood donors in malaria-endemic countries. *Lancet* , **1988**, Oct 22;2(8617):972-973 . **Impact Factor:** 39.060.

#### Workshop/Conferences Attended

- Workshop on “Innovative Teaching Methodologies” ,CPDHE ,University of Delhi.15<sup>th</sup> January,2015
- Orientation Programme in CPDHE ,University of Delhi, 10<sup>th</sup> November-6<sup>th</sup> December,2014
- Proteomics at Advanced Instrumentation Research Facility (AIRF), Jawaharlal Nehru University, Delhi, India,6<sup>th</sup>-6<sup>th</sup> August,2014.



- 32<sup>nd</sup> Annual convention Indian Association of Cancer Research, IACR, ACBR, University of Delhi, Delhi 13<sup>th</sup> -16<sup>th</sup> Feb **2013**
- XVII Annual Symposium on "New Frontiers in Drug Design, Discovery and Development" organized by Ranbaxy Science Foundation.14<sup>th</sup> Feb **2011**.
- Refresher course in Life sciences in CPDHE, University of Delhi, Delhi from 15<sup>th</sup> February-9<sup>th</sup> March, **2011**.
- Workshop on Image Flow Cytometry organized by Institute of Nuclear Medicine and Allied Sciences Delhi,28<sup>th</sup> September,**2010**.
- Workshop on polygraph & Neurophysiology organised by Foundation for assessment and integration of traditional Health system and Central Council for research in Yoga & Naturopathy (CCRYN) Delhi,**2009**
- Eighth Annual Symposium on Frontiers in Biomedical Research,ACBR,University of Delhi,New Delhi,**2008**
- Seventh Annual Symposium on Frontiers in Biomedical Research,ACBR,University of Delhi,New Delhi,**2007**
- Sixth Annual Symposium on Frontiers in Biomedical Research,ACBR,University of Delhi,New Delhi,**2006**
- Building an Integrated Physiological monitoring system: A discussion of DSI's Product and Their Application ". New Delhi, **2006**.
- International Conference on 'Chemistry Biology Interface: Synergistic New Frontiers', November 21-26, **2004**
- V Annual Symposium on Frontiers in Biomedical Research, ACBR, University of Delhi, New Delhi, April 14-16, **2004**
- Certificate course in Flow cytometry Applications conducted by Becton Dickinson Training Center Gurgaon , March10-12,**2004**
- Workshop on "A Holistic Approach to Telemetry and Beyond – Considerations and Strategies from Data Collection, Data Integration to Data Analysis"New Delhi July 19-25,**2003**
- Fourth Annual Symposium in Biomedical Science,ACBR,University of Delhi , April 14-16, **2003**.
- International Conference on the Use of Alternatives to Animals in Research and Education, Feb 18-20, **2003**, New Delhi
- Seminar on 'National Conference on Emerging Areas in Biomedical Sciences' Bundelkhand

University, Jhansi and Dr. B.R.Ambedkar Center for Biomedical Research, December 28-30, **2002**

- Workshop on Powerlab in Life Science Teaching and Research, 12th December, **2002**, Delhi
- Short Term Training Workshop on Environmental Toxicology and Health Impact assessment at Jamia Hamdard ,Delhi ,Sep23-27,**2002**
- WHO –ICMR sponsored Post launch interactive Session on Ethical, Legal & Social Issues of Genomics, IIC, Delhi, October, 26, **2002**
- Symposium "Trends in Molecular Medicine" , AIIMS, Delhi, September **2002**
- Seminar on "The State of Animal Houses in India " ,New Delhi, June10,**2002**
- Second Annual symposium in Biomedical sciences,ACBR,University of Delhi, April 13- 14 **2002**
- Indo-US Symposium on Brain Research,INSA,New Delhi, January 10-12, **2002**
- XXVth National Congress of Indian Association of Medical Microbiologists,New Delhi, Nov, **2001**
- 28<sup>th</sup> Annual meeting of Indian Immunological Society ,New Delhi, Oct 5-6,**2001**
- First Annual Symposium in Biomedical Sciences, ACBR,University of Delhi, Delhi ,April 13- 14 ,**2001**
- FIMSA-IIS Advanced course on Basic and Molecular Immunology, March 5-9 ,**2001**
- 1<sup>st</sup> Scientific Conference of Indian Society for Histocompatibility and Immunogenetics,March1-4,**2001**
- Conducted workshop on “Techniques in recombinant DNA Technology”, March 1 - 15 March, **2000**. (Sanctioned by DBT, New Delhi,
- National Conference of Physiological society of India ,New Delhi. November, **1999** .
- XXIIIrd National Congress of Indian Association of Medical Microbiologists, Chandigarh. November18-21, **1999**
- International Congress of Immunology , New Delhi. November1-6, **1998**
- Workshop on STN Basics( Scientific and Technical Online Information Network) Sept. 18-19, **1998**, University of Delhi, Delhi..
- Indo-France symposium on Multiple Drug Resistance in Emerging Diseases,INSA, New Delhi , 28 Feb – 4March, **1999**
- Symposium on“Current Status of Oral and Contraceptive Agents” in October 31-November 1, **1998**, at ACBR, New Delhi.
- Symposium on “Frontiers in Biomedical Research” at ACBR, New Delhi March31-April2, **1998**.
- STN Seminar and interactive workshop (Scientific and Technical Online Information Network) University of Delhi, Delhi. Sept. 18-19, **1998**.

- 34<sup>th</sup> Annual Convention of Chemists in New Delhi ,December17-20, **1997**.
- Certificate course(15 days) in Research Methodology in PGIMER Chandigarh,Jan**1990**
- Certificate course in Elementary Statistics(15 days) in PGIMER Chandigarh,Jan**1989**
- XIII<sup>th</sup> National Congress of Indian Association of Medical Microbiologists,Jaipur, 10-12<sup>th</sup> November,**1989**

#### Public Service / University Service / Consulting Activity

- Member Secretary Institute Animal Ethics committee 2000 Till 2013.
- Member Bill Committee 2014-16.
- Course Coordinator, Medical Microbiology, from 1999 to till date.
- Course Coordinator, Immunology, from 1999 to till date.
- Course Coordinator, Physiology, from 1998 to 2009.
- Course Coordinator, Advanced Human Physiology, from 1998 to 2009.
- Course Coordinator, Medical toxicology, from 1999 to 2004.
- Curriculum Development for M.Sc Biomedical Sciences course in subjects: Medical Microbiology, Human Physiology, Advanced Human Physiology Immunobiology , Advanced course in Immunology ,Toxicology, Pharmacology
- Curriculum Development for B.Sc Biomedical Sciences course in subjects: Medical Microbiology, Human Physiology, Toxicology, Pathology, Social and Preventive Medicine.
- Panel for screening of Adhoc Lecturer for B.Sc Biomedical Sciences

#### Professional Societies Memberships

Life Member – Indian academy of Neuroscience

Life Member – Society for Neurochemistry

Life Member-Indian Immunological Society

<p>Life Member-Indian Association of Medical Microbiologists</p> <p>Reviewer of <b>Indian Journal of Medical Research(IJMR)</b></p> <p>Reviewer of an International Journal <b>Brain Research</b></p> <p>Reviewer of an international journal <b>Journal of Toxicology and Teratology</b>.</p>
<p>Projects (Major Grants / Collaborations)</p> <ul style="list-style-type: none"> <li>• Project approved by ICMR entitled "Investigation of regulatory role of cholinergic system on apoptosis and inflammation in murine model of global cerebral ischemia Period- <b>2009-2013</b></li> <li>• Project approved by ICMR entitled "Evaluation of the protective role of Hypericum perforatum in chronic hypobaric hypoxia induced neuronal degeneration and memory dysfunction "Period-<b>2009-2012</b></li> <li>• Project approved by UGC entitled "Investigation of the role of Zinc in hypobaric hypoxia induced memory impairment and neuronal damage" Period-<b>2009-2012</b></li> <li>• Project approved by ICMR entitled "Investigation of COX-2 and iNOS induced programmed cell death in cerebral hypoxia" Period-<b>2007-2010</b></li> <li>• Project approved by ICMR entitled "Role of metalloporphyrins in therapeutics of cardiovascular complications during hypoxic stress" Period-<b>2003-2007</b></li> <li>• DBT Workshop on "Techniques in recombinant DNA Technology" conducted from 1<sup>st</sup> March to 15<sup>th</sup> March, 2000.</li> <li>• DST Young Scientist Project entitled "Effect of Calcium channel antagonists (Nifedipine) on the metabolic status of T-lymphocytes during the course of <i>P.berghei</i> infection". Period-<b>1998-2001</b></li> </ul> <p>In addition, I am getting 2-3 lakhs as consumable grant under University Research Grants for the last 10 years.</p>
<p>Other Details</p>

(Signature of Faculty Member)

(Signature & Stamp  
of Head of the Department)