

### Dr. B.S. Lakshmi

Director and Head, Department of Biotechnology  
Associate Professor, Centre for Food Technology  
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### *Education*

| Degree | Year | University                         | Major Subject Studied |
|--------|------|------------------------------------|-----------------------|
| Ph D   | 2000 | Anna University, Chennai - 25      | Biotechnology         |
| M. Sc. | 1990 | University of Madras, Chennai - 25 | Analytical Chemistry  |
| B. Sc. | 1988 | University of Madras, Chennai - 25 | Chemistry             |

### *Positions Held*

| Position                         | Place   | Duration              |
|----------------------------------|---|-----------------------|
| Associate Professor              | Centre for Food Techology, Department of Biotechnology, Anna University, Chennai - 25 | August 2014 - Present |
| Assistant Professor              | Centre for Biotechnology, Department of Biotechnology, Anna University, Chennai - 25  | 2004 - 2014           |
| Post Doctoral Research Associate | Imperial college, London, UK  | 2001 - 2003           |

### *Overseas Visits*

| Purpose | Place of Visit | Duration |
|---------|----------------|----------|
|---------|----------------|----------|

| Purpose  | Place of Visit                              | Duration                          |
|--|---|-----------------------------------|
| Post Doctoral Research Associate   | Imperial College, London, UK.               | June 2001 - June 2003.            |
| International conference on Engineering enzymes for Biocatalysis using Directed evolution                  | Pasteur Institute, Paris, France.           | 15 September - 20 September 2002. |
| Invited Speaker at the Third Bilateral Symposium on Structural Biology                                     | National University of Singapore, Singapore | 30 November - 1 December 2007.    |
| International Training programme in cell and Molecular Biology by International federation of Cell Biology | National Health Research Institute, Taiwan  | 15 June - 29 June 2009.           |
| GETEX - 2015   | Dubai                                       | 14 April - 18 April 2015          |
| Colloborative Research "ARCUS" Programme   | Francois Rabelais University, Tours, France | 19 May - 04 June 2017             |

## *Membership*

Member of Biochemistry Research society of India.

Member of Society for Biotechnologists of India.

Member of Chemical Research society of India.

## Awards

- **Mid Career Award - 2017** University Grants Commission, Department of Higher Education, Govt. of India.
- **National Women Bio-scientist Award - 2011 (Young category)**, Department of Biotechnology, Ministry of Science and Technology, Govt. of India.
- **TamilNadu Young Women Scientist Award - 2007 (Life Sciences)**, Science city, Department of Higher Education, Govt. of Tamil Nadu.

## Publications

### 2020

- VM Vidhya, BS Lakshmi, K Ponnuraj., In silico prediction of a new lead compound targeting enolase of trypanosomatids through structure-based virtual screening and molecular dynamic studies. Journal of Molecular Modeling 26 (2), 23, 2020.

### 2019

- B SarathKumar, B S Lakshmi., In silico investigations on the binding efficacy and allosteric mechanism of six different natural product compounds towards PTP1B inhibition through docking and molecular dynamics simulations. Journal of molecular modeling 25 (9), 272. 2019.
- K Shilpa, B S Lakshmi., Influence of exogenous cinnamic acid on the production of chlorogenic acid in Cichorium intybus L cell culture. South African Journal of Botany 125, 527-532. 2019.
- Y Geetharani, B S Lakshmi., Structural insight into the antagonistic action of diarylheptanoid on human estrogen receptor Alpha., Journal of Biomolecular Structure and Dynamics 37 (5), 1189-1203. 2019 .

### 2018

- Padmanaban Muthukumaran, Gopal Thiyagarajan, Rajendran Arun Babu , Baddireddi Subhadra Lakshmi., Raffinose from Costus speciosus attenuates lipid synthesis through modulation of PPARs/SREBP1c and improves insulin sensitivity through PI3K/AKT., Chemico-Biological Interactions, Volume 284, 25 March 2018, Pages 80-89 (Impact Factor : 3.2)

- Geetha Rani Yuvaraj and Baddireddi Subhadra Lakshmi., Structural insight into the antagonistic action of diarylheptanoid on human estrogen receptor Alpha., Journal of Biomolecular Structure and Dynamics, <https://doi.org/10.1080/07391102.2018.1453378> ( Impact Factor : 3.1)

## 2017

- S Sudhagar, S Sathya, R Anuradha, G Gokulapriya, Y Geetharani, B S Lakshmi., Inhibition of epidermal growth factor receptor by ferulic acid and 4-vinylguaiacol in human breast cancer cells, Biotechnology letters, 1-6, 2017. doi: 10.1007/s10529-017-2475-2. (Impact Factor: 1.730)
- Koteppa Pari, S Sudhagar, B S Lakshmi., Presence of biogenic and intrinsically derived organic solvents in Ginger rhizome oil: A specific reference to supercritical fluid extract of ginger, Journal of Medicinal Plants Studies 5 (3), 182-184, 2017.

## 2016

- S Sudhagar, S Sathya, G Gokulapriya, B S Lakshmi., AKT-p53 axis protect cancer cells from autophagic cell death during nutrition deprivation, Biochemical and Biophysical Research Communications 471 (4), 396-401, 2016. (Impact Factor: 2.297)
- G Thiagarajan, P Muthukumaran, B Sarath Kumar, VS Muthusamy, B S Lakshmi., Selective Inhibition of PTP1B by Vitalboside A from Syzygium cumini Enhances Insulin Sensitivity and Attenuates Lipid Accumulation Via Partial Agonism to PPAR?: In Vitro and In Silico Investigation, Chemical Biology and Drug Design, DOI: 10.1111/cbdd.12757, 2016. (Impact Factor: 2.485)
- N Poornima Devi, K N Sangeetha, B S Lakshmi., Role of STAT3 phosphorylation in ethanol mediated proliferation of breast cancer cells, Journal Breast Cancer, 19(2), 2016. (Impact Factor: 1.576)

## 2015

- S Sathya, S Sudhagar, B S Lakshmi., Estrogen suppresses breast cancer proliferation through GPER / p38 MAPK axis during hypoxia, Molecular and cellular endocrinology, 417, 200-210, 2015. (Impact Factor: 4.405)
- K N Sangeetha, B S Lakshmi, S Niranjali Devaraj ., Dexamethasone promotes hypertrophy of H9C2 cardiomyocytes through calcineurin B pathway, independent of NFAT activation, Molecular and cellular biochemistry, 1-12, 2015. (Impact Factor: 2.393)
- S Anand, R B Raja, B S Lakshmi., Enhancement of glucose uptake by Ficus hispida methanolic extract through phosphatidylinositol 3 kinase and inhibiting aldose

reductase - An in vitro analysis, *European Journal of Integrative Medicine* 7 (2), 164-171, 2015. (Impact Factor: 0.777)

- R Kamaraj Kennedy, P Ravindra Naik, V Veena, B S Lakshmi, Pragna Lakshmi, R Krishna, N Sakthivel., E5-Methyl phenazine-1-carboxylic acid: A novel bioactive metabolite by a rhizosphere soil bacterium that exhibits potent antimicrobial and anticancer activities, *Chemico-biological interactions* 231, 71-82, 2015. (Impact Factor: 2.577)
- . G M Shanthini, Catherine Ann Martin, N Sakthivel, Sarath Chandra Veerla, K Elayaraja, B S Lakshmi, Physical and biological properties of the ion beam irradiated PMMA-based composite films, *Applied Surface Science* 329, 116-126, 2015. (Impact Factor: 2.711)

## 2014

- S Suganya, J Venugopal, S Ramakrishna, B S Lakshmi, V R Dev., Naturally derived biofunctional nanofibrous scaffold for skin tissue regeneration, *International journal of biological macromolecules*, 68, 135-143, 2014. (Impact Factor: 2.596)
- . P Jyothi Kumari, S Selvaraj, K N Sangeetha, B Sarath Kumar, B S Lakshmi., p53 Mediates impaired insulin signaling in 3T3-L1 adipocytes during hyperinsulinemia, *Cell biology international*, 38(7), 818-24, 2014. (Impact Factor: 1.64)
- . S Suganya, J Venugopal, S Ramakrishna, B S Lakshmi, VR Giri Dev., Herbally derived polymeric nanofibrous scaffolds for bone tissue regeneration, *Journal of Applied Polymer Science*, 131(3), 1097-4628, 2014. (Impact Factor: 1.395)
- S Sathya, S Sudhagar, B Sarathkumar, B S Lakshmi., EGFR inhibition by pentacyclic triterpenes exhibit cell cycle and growth arrest in breast cancer cells., *Life sciences*, 95(1), 53-62, 2014. (Impact Factor: 2.555)
- S Suganya, J Venugopal, S Ramakrishna, B S Lakshmi, VR Giri Dev., Aloe vera/silk fibroin/hydroxyapatite incorporated electrospun nanofibrous scaffold for enhanced osteogenesis, *Journal of Biomaterials and Tissue Engineering*, 4(1), 9-19, 2014.
- B Jayashree ,Y S Bibin ,D Prabhu,C S Shanthirani,K Gokulakrishnan, B S Lakshmi,V Mohan,M Balasubramaniam., Increased circulatory levels of lipopolysaccharide (LPS) and zonulin signify novel biomarkers of proinflammation in patients with type 2 diabetes., *Molecular and cellular biochemistry*, 388(1-2), 203-10, 2014. (Impact Factor: 2.329)

## 2013

- S Shanmugavel, VJ Reddy, S Ramakrishna, B S Lakshmi, VRG Dev., Precipitation of hydroxyapatite on electrospun polycaprolactone/aloe vera/silk fibroin nanofibrous scaffolds for bone tissue engineering, *Journal of biomaterials applications*, 2013 Nov 27. [Epub ahead of print]. (Impact Factor: 2.640)
- K Shilpa, T Dinesh, B S Lakshmi., An In Vitro model to probe the regulation of adipocyte differentiation under hyperglycemia, *Diabetes & metabolism journal*, 37 (3), 176-180, 2013. (Impact Factor: 2.388)

- T Karthikeyan, M Pravin, V S Muthusamy, R B Raja, B S Lakshmi., In Vitro Investigation of the Immunomodulatory Potential of Probiotic *Lactobacillus casei*, *Probiotics and Antimicrobial Proteins*, 5 (1), 51-58, 2013.
- . K N Sangeetha, K Shilpa, P Jyothi Kumari, B S Lakshmi., Reversal of dexamethasone induced insulin resistance in 3T3-L1 adipocytes by 3 $\beta$ -taraxerol of *Mangifera indica*, *Phytomedicine*, 20 (3), 213-220, 2013. (Impact Factor: 3.5)

## 2012

- S Parani, B S Lakshmi, K Pandian., Biopolymer Encapsulation of CdTe Quantum Dot for In Vitro Controlled Drug Delivery Release of 6-Mercaptopurine, *Advanced Materials Research*, 584, 258-262, 2012
- S Sreeja, TR Santhosh Kumar, B S Lakshmi, S Sreeja., Pomegranate extract demonstrate a selective estrogen receptor modulator profile in human tumor cell lines and in vivo models of estrogen deprivation, *The Journal of nutritional biochemistry*, 23 (7), 725-732, 2012. (Impact Factor: 4.552)
- B Sarath Kumar, N Goswami, S Selvaraj, B S Lakshmi., Molecular dynamics approach to probe the allosteric inhibition of PTP1B by chlorogenic and cichoric acid, *Journal of Chemical Information and Modeling*, 52(8):2004-12, 2012. (Impact Factor: 4.65)
- Davis JA, Sharma S, Mittra S, Sujatha S, Kanaujia A, Shukla G, Katiyar C, B S Lakshmi, Bansal VS, Bhatnagar PK., Antihyperglycemic effect of *Annona squamosa* hexane extract in type 2 diabetes animal model: PTP1B inhibition, a possible mechanism of action?, *Indian Journal of Pharmacology*, 44(3):326-32, 2012. (Impact Factor: 0.583)

## 2011

- . S Sudhagar, S Sathya, B S Lakshmi., Rapid non-genomic signalling by 17 $\beta$ -oestradiol through c-Src involves mTOR-dependent expression of HIF-1 $\alpha$  in breast cancer cells, *British journal of cancer* 105 (7), 953-960, 2011. (Impact Factor: 5.043)
- J Kumaresan, T Kothai, B S Lakshmi., In silico approaches towards understanding CALB using molecular dynamics simulation and docking, *Molecular Simulation*, 37 (12), 1053-1061, 2011. (Impact Factor: 1.056)
- S Suganya, T Senthil Ram, B S Lakshmi, VR Giridev., Herbal drug incorporated antibacterial nanofibrous mat fabricated by electrospinning: an excellent matrix for wound dressings, *Journal of Applied Polymer Science*, 121 (5), 2893-2899, 2011. (Impact Factor: 1.395)
- S Sudhagar, S Sathya, K Pandian, B S Lakshmi., Targeting and sensing cancer cells with ZnO nanoprobe In Vitro, *Biotechnology letters*, 33 (9), 1891-1896, 2011. (Impact Factor: 1.6)

## 2010

- V S Muthusamy, C Saravanababu, M Ramanathan, R Bharathi Raja, S Sudhagar, S Anand, B S Lakshmi., Inhibition of protein tyrosine phosphatase 1B and regulation of insulin signalling markers by caffeoyl derivatives of chicory (*Cichorium intybus*) salad leaves, *British journal of nutrition*, 104 (06), 813-823, 2010. (Impact Factor: 3.302)
- S Sathya, S Sudhagar, M Vidhya Priya, R B Raja, V S Muthusamy, S N Devaraj, B S Lakshmi., 3- $\alpha$ -hydroxylup-20(29)-ene-27,28-dioic acid dimethyl ester, a novel natural product from *Plumbago zeylanica* inhibits the proliferation and migration of MDA-MB-231 cells, *Chemico Biological Interactions*, 188 (3), 412-20, 2010. (Impact Factor: 2.89)
- S Sujatha, S Anand, KN Sangeetha, K Shilpa, J Lakshmi, A Balakrishnan, B S Lakshmi., Biological evaluation of (3 $\alpha$ )-STIGMAST-5-EN-3-OL as potent anti-diabetic agent in regulating glucose transport using In Vitro model, *International Journal of Diabetes Mellitus*, 2 (2), 101-109, 2010.
- . S Anand, V S Muthusamy, S Sujatha, K N Sangeetha, R Bharathi Raja, S Sudhagar, N Poornima Devi B S Lakshmi., Aloe emodin glycosides stimulates glucose transport and glycogen storage through PI3K dependent mechanism in L6 myotubes and inhibits adipocyte differentiation in 3T3L1 adipocytes, *FEBS letters*, 584 (14), 3170-3178, 2010. (Impact Factor: 3.65)
- K R Rupesh, A Moushumi Priya, B Sundarakrishnan, R Venkatesan, B S Lakshmi, S Jayachandran., 2,2'-bipyridyl based copper complexes down regulate expression of pro-inflammatory cytokines and suppress MAPKs in mitogen induced Peripheral blood mononuclear cells, *European journal of Medicinal chemistry*, 45 (6), 2141-2146, 2010. (Impact Factor: 3.0)
- Anil Kanaujia, Rajeev Duggar, Steve Thomas Pannakal, Satyapal Singh Yadav, Chandra Kant Katiyar, Vinay Bansal, S Anand, S Sujatha, B S Lakshmi., Insulinomimetic activity of two new gallotannins from the fruits of *Capparis moonii*, *Bioorganic & medicinal chemistry*, 18 (11), 3940-3945, 2010. (Impact Factor: 2.9)
- K Shilpa, C Selvakkumar, A K Senthil, B S Lakshmi., In Vitro root culture of *Ocimum sanctum* L. and evaluation of its free radical scavenging activity, *Plant Cell, Tissue and Organ Culture*, 101 (1), 105-109, 2010. (Impact Factor: 3.633)
- K N Sangeetha, S Sujatha, V S Muthusamy, S Anand, N Nithya, D Velmurugan, A Balakrishnan, B S Lakshmi., 3 $\alpha$ -taraxerol of *Mangifera indica*, a PI3K dependent dual activator of glucose transport and glycogen synthesis in 3T3-L1 adipocytes, *Biochimica et Biophysica Acta-General Subjects* 1800 (3), 359-366, 2010. (Impact Factor: 5.0)
- G Balakrishnan, L Janakarajan, A Balakrishnan, B S Lakshmi., Molecular basis of the anti-inflammatory property exhibited by cyclo-pentano phenanthrenol isolated from *Lippia nodiflora*, *Immunological investigations* 39 (7), 713-739, 2010. (Impact Factor: 1.731)
- J Lakshmi, K S Vinay Kumar, B Sarath kumar, B S Lakshmi., Cyclosporin A stabilises RBL-2H3 cell membrane via induction of WASP phosphorylation and actin polymerisation, *International Journal of Integrative Biology*, 9 (2), 84-91, 2010.
- S Ramadevi Mani, B S Lakshmi., G1 arrest and caspase-mediated apoptosis in HL-60 cells by dichloromethane extract of *Centrosema pubescens*, *American Journal of Chinese Medicine*, 38 (6), 1143, 2010. (Impact Factor: 2.281)

## 2009

- K Shilpa, KN Sangeetha, VS Muthusamy, S Sujatha, B S Lakshmi., Probing key targets in insulin signaling and adipogenesis using a methanolic extract of *Costus pictus* and its bioactive molecule, methyl tetracosanoate, *Biotechnology letters*, 31 (12), 1837-1841, 2009. (Impact Factor: 1.853)
- B S Lakshmi, S Sujatha, S Anand, K N Sangeetha R B Narayanan, C Katiyar, Anil Kanaujia, Rajeev Duggar, Yogendra Singh, Konasubrahmanya Srinivas, Vinay Bansal, Simi Sarin, Ruchi Tandon, Suchitra Sharma and Suchita Singh., Cinnamic acid, from the bark of *Cinnamomum cassia*, regulates glucose transport via activation of GLUT4 on L6 myotubes in a phosphatidylinositol 3-kinase-independent manner, *Journal of diabetes*, 1 (2), 99-106, 2009. (Impact Factor: 2.939)
- K Subramanian, C Selvakkumar, K S Vinaykumar, Nabajyoti Goswami, S Meenakshisundaram, A Balakrishnan, B S Lakshmi., Tackling multiple antibiotic resistance in enteropathogenic *Escherichia coli* (EPEC) clinical isolates: a diarylheptanoid from *Alpinia officinarum* shows promising antibacterial and immunomodulatory activity against EPEC and its lipopolysaccharide-induced inflammation, *International journal of antimicrobial agents*, 33 (3), 244-250, 2009. (Impact Factor: 4.415)

## 2008

- K. Subramanian, R. Balakrishna Shankar, S. Meenakshisundaram, B S Lakshmi, Peter H. Williams and Arun Balakrishnan., LamB-mediated adherence of enteropathogenic *Escherichia coli* to HEp-2 cells, *Journal of applied microbiology*, 105 (3), 715-722, 2008. (Impact Factor: 2.196)
- V S Muthusamy, S Anand, K N Sangeetha, S Sujatha, B Arun, B S Lakshmi., Tannins present in *Cichorium intybus* enhance glucose uptake and inhibit adipogenesis in 3T3-L1 adipocytes through PTP1B inhibition, *Chemico-biological interactions* 174 (1), 69-78, 2008. (Impact Factor: 2.969)
- K Subramanian, C Selvakkumar, S Meenakshisundaram, A Balakrishnan, B S Lakshmi., Extract of *Alpinia officinarum* suppresses enteropathogenic *Escherichia coli* (EPEC) lipopolysaccharide (LPS) induced inflammation in J774 A.1 macrophages, *Journal of Health Science*, 54 (1), 112-117, 2008. (Impact Factor: 0.80)
- S Kaushik Ramakrishnan, V Krishna, K S Vinod, B S Lakshmi, S Anishetty, P Gautam., Molecular dynamics simulations of lipases, *International Journal of Integrative Biology*, 2 (3), 204-210, 2008.

## 2007



- C Selvakkumar, A Balakrishnan, B S Lakshmi., Rapid In Vitro Micropropagation of *Alpinia officinarum* Hance, An Important Medicinal Plant, Through Rhizome Bud Explants., *Asian Journal of Plant Sciences*, 6 (8), 1251-1255, 2007.
- J J James, B S Lakshmi, A S N Seshasayee, P Gautam., Activation of *Candida rugosa* lipase at alkane-aqueous interfaces: A molecular dynamics study, *FEBS letters*, 581 (23), 4377-4383, 2007. (Impact Factor: 3.65)
- M Puthenedam, P H Williams, B S Lakshmi, A Balakrishnan., Modulation of tight junction barrier function by outer membrane proteins of enteropathogenic *Escherichia coli*: Role of F-actin and junctional adhesion molecule-1, *Cell biology international*, 31 (8), 836-844, 2007. (Impact Factor: 1.64)
- C Selvakkumar, B Gayathri, KS Vinaykumar, B S Lakshmi, A Balakrishnan., Potential anti-inflammatory properties of crude alcoholic extract of *Ocimum basilicum* L. in human peripheral blood mononuclear cells, *Journal of Health Sciences*, 53(4) 500-505, 2007. (Impact Factor: 0.80)
- B Gayathri, N Manjula, KS Vinaykumar, B S Lakshmi, A Balakrishnan., Pure compound from *Boswellia serrata* extract exhibits anti-inflammatory property in human PBMCs and mouse macrophages through inhibition of TNF $\alpha$ , IL-1 $\beta$ , NO and MAP kinases, *International Immunopharmacology*, 7 (4), 473-482, 2007. (Impact Factor: 2.417)
- V Senthil, S Ramadevi, V Venkatakrishnan, P Giridharan, B S Lakshmi, A Vishwakarma, A Balakrishnan., Withanolide induces apoptosis in HL-60 leukemia cells via mitochondria mediated cytochrome c release and caspase activation, *Chemico-biological interactions*, 167 (1), 19-30, 2007. (Impact Factor: 2.969)

## 1998-2006

- K S Vinod Kumar, B Ramasubhan, B S Lakshmi, P Gautam., A sensitive assay for lipase using tetra sulfonatophenyl porphyrin., *Analytical biochemistry*, 356 (2), 294-296, 2006. (Impact Factor: 2.582)
- J J James, B S Lakshmi, V Raviprasad, M J Ananth, P Kanguane, P Gautam., Insights from molecular dynamics simulations into pH-dependent enantioselective hydrolysis of ibuprofen esters by *Candida rugosa* lipase., *Protein engineering* 16 (12), 1017-1024, 2003.
- B S Lakshmi, P Kanguane, Y Guo, Y Z Chen, P Gautam., Molecular basis for the stereospecificity of *Candida rugosa* lipase (CRL) towards ibuprofen., *Biocatalysis and Biotransformation*, 17 (6), 475-486, 2000. (Impact Factor: 0.895)
- B S Lakshmi, P Kanguane, K Madhavi, S Mukut, P Gautam., The effect of hydrophobicity on the interfacial activation of *Candida rugosa* lipase., *Journal of Biochemistry, Molecular Biology and Biophysics*, 4 (4), 293-298, 2000.
- B S Lakshmi, P Kanguane, B Abraham, G Pennathur., Effect of vegetable oils in the secretion of lipase from *Candida rugosa* (DSM 2031)., *Letters in applied microbiology*, 29 (1), 66-70, 1999. (Impact Factor: 1.629)
- K S Kumar, B S Lakshmi, G Pennathur., Automation photometer of Hitachi U-2000 spectrophotometer with RS-232C-based computer., *Journal of Analytical Methods in Chemistry*, 20 (6), 189-193, 1998. (Impact Factor: 0.565)

## Reviews

- K N Sangeetha, S Sujatha, V S Muthusamy, S Anand, K Shilpa, P Jyothi kumari, B Sarath Kumar, G Thiyagarajan, B S Lakshmi., Current trends in small molecule discovery targeting key cellular signaling events towards the combined management of diabetes and obesity, *Bioinformation*, 13(12): 394-399 , 2017
- K Shilpa, K Varun, B S Lakshmi., An alternate method of natural drug production: Elciting secondary metabolite production using plant cell culture, *Journal of Plant Sciences* 5 (3), 222-247, 2010.

## Book Chapters

- B S Lakshmi and G Thiyagarajan. (2017) Multitargeted strategies towards identification of potential drug candidates form Natural products in the management of obesity. *Antiobesity drug discovery and development*, Volume III. Bentham Science Publications, Inc.
- B S Lakshmi, K N Sangeetha and K Shilpa. (2013) Flavonoids as Antioxidant therapy for metabolic disorders. *Medicinal plants: antioxidant properties , traditional uses and conservation strategies*. Nova Science Publishers, Inc.
- K Shilpa and B S Lakshmi (2011). Chapter 2: Insight into Understanding the Molecular Mechanism of obesity Associated Diabetes. *Bioactive Compounds*. Edited by A. Bitterlich and S. Fischl. Nova Science Publishers, Inc. ISBN 978-1-61324-865-2.
- V S Muthusamy and B S Lakshmi (2010). Chapter 11: Multi-targeted approaches for polygenic disorders using medicinal plants: A new battle against old adversaries. *Medicinal Plants: Phytochemistry, Pharmacology and Therapeutics* edited by V.K.Gupta, G. D. Singh, Surjeet Singh and A. Kaul, Published by Daya publishing house, Vol. 1, pp 215-227.

## Patents Filed

- Pub.No.: WO/2008/117230 International Application No: PCT/IB2008/051089 International Filing Date: 24.03.2008; Publication Date: 02.10.2008 IPC: A61K 36/185 (2006.01), A61P 29/00 (2006.01) C. K. Katiyar, A. Kanaujia, R. Duggar, S. S. Yadav, N. Sharma, A. Ray, R. Shirumalla, M. Bajpai, G. Shukla, B. S. Lakshmi, K. S. Vinaykumar. ♦ "Standardised Bioactive Herbal Extract - Boerhaavia Diffusa", 2008.

- Pub. No.: WO/2008/125928 Patent No./Application No. 799\DEL\2007. Filed 21-12-2007. International Patent Classification: A61K 36/185 (2006.01); A61P 3/10 (2006.01) International Patent Number: PCT\IB2007\055302 C. K. Katiyar, A. Kanaujia, Y. Singh, S. T. Pannakal, R. Duggar, M. Aggarwal, K. Srinivas, V. Bansal, S. Sharma, S. Mittra, S. S Yadav, A. Ray, B.S. Lakshmi, S. Sujatha, and G. Shukla. ♦Standardized Bioactive Extracts of *Annona squamosa*", 2007.
- Patent No./Application No. 966/DEL/2007., filled 3rd May, 2007. C. K. Katiyar, S. T. Pannakal, A. Kanaujia, K. S. Srinivas, Y. Singh, R. Duggar, V. Bansal, S. Sharma, B.S. Lakshmi, B. Gayathri. ♦Novel Tannin Molecule from the Fruits of *Capparis Mooni* (Anti-Diabetic)". 2007.
- Patent No./Application No. 209/DEL/2007., filled February 1st 2007 C. K. Katiyar, S. T. Pannakal, A. Kanaujia, K. S. Srinivas, Y. Singh, A. Ray, B.S. Lakshmi. ♦Novel Anti-inflammatory Molecule from *Premna Integrifolia* Linn". 2007.
- Patent No./Application No. 1222/DEL/2007. ♦Standardised Bioactive Herbal Extract - *Cinnamomum cassia*.(Anti-Diabetic). 2007.
- Patent No./Application No. 2756/DEL/2006., filled 21st Dec, 2006. C. K. Katiyar, A. Kanaujia, S. T. Pannakal, K. S. Srinivas, Y. Singh, M. Aggarwal, R. Duggar, V. Bansal, S. Sharma, A. Ray, B.S.Lakshmi, B. Gayathri. ♦Extracts of *Annona Squamosa* useful for the treatment of Diabetes and Inflammation". 2006.

## Others

- Assistant Editor, Bioinformation (Journal on Bioinformatics, Singapore).
- Reviewer for the Manuscripts from International Journals.
- Reviewer for the Research projects from DBT, Govt. of India.
- Chairperson during the Biology Session on New/Innovative strategies to enhance learning in biology at higher secondary level in the Workshop on Curriculum Revision TNCF-2017 conducted by TN-SCERT (Tamil Nadu State Council of Education Research and Training).