

CURRICULUM VITAE

SANJAY KUMAR BANERJEE, PH.D.

Associate Professor, NIPER-Guwahati, Assam

Adjunct Faculty

Translational Health Science and Technology Institute (THSTI)
NCR Biotech Science Cluster

Faridabad, Haryana

Phone: +91 1292876475, 7042354595

E Mail: skbanerjee@thsti.res.in

E Mail: banerjees74@hotmail.com



Guest Faculty: DPSRU, New Delhi

Guest Faculty: RCB, Faridabad

Past Association

Guest Faculty: NIPER, Hyderabad (2009-2014)

Research Interest

My research goal is to identifying and validating novel targets and therapeutic intervention for cardiovascular and metabolic disorders. My laboratory is mostly interested to understand molecular mechanisms of insulin resistance and cardiac complication in diabetes, and identify nutritional agents/natural products to reduce the disease progression. Overall goal is to bridge the gap between observations in the basic research laboratory and the clinical bedside. My studies will be an integral part in “translating” new discoveries into therapeutic initiatives.

Academic Qualifications

PhD, Pharmacology, All India Institute of Medical Sciences, New Delhi, India, (March, 2004)

Master of Pharmacy, Jadavpur University, Kolkata, India, 1998

Bachelor of Pharmacy, Jadavpur University, Kolkata, India, 1996

Teaching Experience

- Took two courses (MS Pharm), Pharmaceutical Biotechnology and Pharmacology, at NIPER-Hyderabad from 2009 to 2014.
- Took Pharmacology (drug metabolism) courses (MS Pharm) in NIPER-Guwahati in 2017.
- Took M. Pharm five courses (Pharmaceutical Biotechnology, Immunology, Peptidomimetics, Drug Discovery and Molecular Pharmacology) since 2017 at DPSRU, New Delhi.
- Coordinate drug discovery course at THSTI, Faridabad and RCB, Faridabad.

Research Experience

Scientist E/Principal Scientist II (April, 2014-20th Jan, 2020)

Drug Discovery Research Center

Translational Health Science and Technology Institute, Faridabad

Scientist D and Ramalingaswami Fellow (2009-Mar, 2014)

Division of Medicinal Chemistry and Pharmacology

CSIR-Indian Institute of Chemical Technology, Hyderabad

Post Doctoral Associate (2005 –2009)

Cardiovascular Institute, Department of Medicine, University of Pittsburgh,

Pittsburgh, PA, USA

Post Doctoral Associate (2003 –2005)

Department of Medicine, SUNY Upstate Medical University

Syracuse, NY, USA

Awards/Honors

- Awarded **Prof. Shailendra K Vajpeyee Award** from “Indian Society of Hypertension” for the year ‘2015’ for his research work regarding cardiovascular complication in diabetes.
- Nominated for **P.P.Suryakumari Award** (Indian Pharmacological Society) for best research work published in the field of *Diabetes mellitus, other endocrinal and metabolic disorders*.
- Member of the “**Expert Group on Metabolic Disorders and Autoimmune diseases**” DBT taskforce (2014-2017)
- Nominated member in “**Diabetes and Cardiovascular Disease (D&CVD)**” study group of **European Association for the Study of Diabetes (EASD) for 3 years (2011-2014)**
- Awarded **Travel Scholarship** for research presentation in **Keystone Conference** “Molecular Mechanism of Arrhythmia and Heart Failure”, Keystone, Colorado, April 2-7, 2009.
- Awarded best Postdoctoral research work at the University of Pittsburgh **Sixth Annual Department of Medicine Research Day**, May, 2008.
- Awarded independent **Postdoctoral Project** from American Heart Association (July, 2007- June, 2009).
- Selected as one and only Postdoctoral Fellow to present at the University of Pittsburgh **Fifth Annual Department of Medicine Research Day** (May 3, 2007) as a representative of the research excellence.
- Awarded third place in Poster Presentation in Fellow’s Research Day organized by “**American Heart Association**” Pittsburgh, February, 2007
- Postdoctoral Fellowship award from **Hillgrove Foundation**, 2006-2007
- Awarded **Young Scientist Project** from **Department of Science & Technology (DST)**, Ministry of Science & Technology, Government of India, New Delhi, India, in 2002.
- Selected as **Senior Research Fellow** from **Council of Scientific and Industrial Research**, Government of India, New Delhi, India, in 1999.
- Qualified **GATE** (Graduate Aptitude Test in Engineering) in 1996 and was awarded post graduation fellowship during post graduation from 1996 to 1998.
- Awarded National Scholarship in class 10th standard in 1990.

PhD/ dissertation under direct supervision of Dr. Sanjay K Banerjee.

PhD guided (completed): **6**

PhD thesis submitted: **2**

PhD ongoing: **3**

JRF (DBT fellow): **2**

RA: **2**

Dissertation completed: **18**

List of Publications

Total number of publication: 89, Book Chapter: 6, Review Paper: 13

Publication as Corresponding Author: 50

h-index (Google citation): 34, i10-index:69, Total citation: 4862

Cumulative Impact factor: 283

(*corresponding author)

Research Papers

1. Kumar Y, Kuche K, Swami R, Katiyar SS, Chaudhari D, Katare PB, **Banerjee SK**, Jain S. Exploring the potential of novel pH sensitive lipoplexes for tumor targeted gene delivery with reduced toxicity. **Int J Pharm.** 2020 Jan 5;573:118889. **[Impact Factor: 4.2]**
2. Kamboj P, Talukdar NC, **Banerjee SK***. Therapeutic Benefit of Dillenia indica in Diabetes and Its Associated Complications. **J Diabetes Res.** 2019 Nov 23;2019:4632491. **[Impact Factor: 3.0]**
3. Oaks Z, Jimah J, Grossman CC, Beckford M, Kelly R, **Banerjee SK**, Niland B, Miklossy G, Kuloglu Z, Kansu A, Lee W, Szonyi L, Banki K, **Perl A**. Transaldolase haplosufficiency in subjects with acetaminophen-induced liver failure. **J Inherit Metab Dis.** 2019 Nov 26. **[Impact Factor: 4.3]**
4. Senapati T, Kothidar A, **Banerjee SK**, DAS B. Insights into the gastrointestinal tract microbiomes of Indian population. **J Biosci.** 2019 Oct;44(5). pii: 113. **[Impact Factor: 1.8]**
5. Nizami HL, Katare P, Prabhakar P, Kumar Y, Arava SK, Chakraborty P, Maulik SK, **Banerjee SK***. Vitamin D deficiency in rats causes cardiac dysfunction by inducing myocardial insulin resistance. **Mol Nutr Food Res.** 2019, 63(17):e1900109 **[Impact Factor: 4.6]**
6. Adela R, Reddy PNC, Ghosh TS, Aggarwal S, Yadav AK, Das B, **Banerjee SK***. Serum protein signature of coronary artery disease in type 2 diabetes mellitus. **Journal of Translational Medicine** 2019 Jan 24;17(1):17. **[Impact Factor: 4.1]**
7. Bagul PK, Katare PB, Bugga P, Dinda AK, **Banerjee SK***. SIRT-3 Modulation by Resveratrol Improves Mitochondrial Oxidative Phosphorylation in Diabetic Heart through Deacetylation of TFAM. **Cells.** 2018 Nov 28;7(12). **[Impact Factor: 5.6]**

8. Galhotra P, Prabhakar P, Meghwani H, Mohammed SA, **Banerjee SK**, Seth S, Hote MP, Reeta KH, Ray R, Maulik SK. Beneficial effects of fenofibrate in pulmonary hypertension in rats. *Mol Cell Biochem*. 2018 May 14. [Epub ahead of print] [**Impact Factor: 2.5**].
9. Mattapally S, Singh M, Murthy KS, Asthana S*, **Banerjee SK***. Computational modeling suggests impaired interactions between NKX2.5 and GATA4 in individuals carrying a novel pathogenic D16N NKX2.5 mutation. *Oncotarget*, 2018, 9(17):13713-13732. [**Impact Factor 5.1**]
10. Mandal H, Katiyar SS, Swami R, Kushwah V, Katare PB, Kumar Meka A, **Banerjee SK**, Popat A, Jain S. ϵ -Poly-L-Lysine/plasmid DNA nanoplexes for efficient gene delivery in vivo. *Int J Pharm*. 2018, 542(1-2):142-152. [**Impact Factor 3.8**]
11. Meghwani H, Prabhakar P, Mohammed SA, Dua P, Seth S, Hote MP, **Banerjee SK**, Arava S, Ray R, Maulik SK. Beneficial Effect of *Ocimum sanctum* (Linn) against Monocrotalin Induced Pulmonary Hypertension in Rats. *Medicines* (Basel). 2018, April 17, 5(2). [**Impact Factor: New journal**].
12. Katare PB, Bagul PK, Dinda AK, **Banerjee SK***. Toll-Like Receptor 4 Inhibition Improves Oxidative Stress and Mitochondrial Health in Isoproterenol-induced Cardiac Hypertrophy in Rats. *Frontiers in Immunology*, 2017, 8:719. [**Impact Factor 5.5**]
13. Rajasekhar Reddy P, Rani PU, Mattapally S, **Banerjee SK**. Ultra-small silver nanoparticles induced ROS activated Toll-pathway against *Staphylococcus aureus* disease in silkworm model. *Mater Sci Eng C Mater Biol Appl*. 2017, 77:990-1002. [**Impact Factor 5.1**]
14. Adela R, Borkar RM, Mishra N, Vishwakarma G, Varma BA, Srinivas R*, **Banerjee SK***. Lower serum vitamin D metabolites levels in relation to circulating cytokine/chemokines and metabolic hormones in pregnant women with hypertensive disorders. *Frontiers in Immunology*, 2017, 8:273. [**Impact Factor 5.5**]
15. Khatua TN, Borkar RM, Mohammed SA, Dinda AK, Srinivas R, **Banerjee SK***. Novel Sulfur Metabolites of Garlic Attenuate Cardiac Hypertrophy and Remodeling through Induction of Na⁺/K⁺-ATPase Expression. *Frontiers in Pharmacology*, 2017, 30 January 8:18. [**Impact Factor 3.8**]
16. Meghwani H, Prabhakar P, Mohammed SA, Seth S, Hote MP, **Banerjee SK**, Arava S, Ray R, Maulik SK. Beneficial effects of aqueous extract of stem bark of *Terminalia arjuna* (Roxb.), An ayurvedic drug in experimental pulmonary hypertension. *J Ethnopharmacol*. 2017, 197:184-194. [**Impact Factor 3.1**]
17. Ramratnam M, Salama G, Sharma RK, Wang DW, Smith SH, **Banerjee SK**, Huang XN, Gifford LM, Pruce ML, Gabris BE, Saba S, Shroff SG, Ahmad F. Gene-Targeted Mice with the Human Troponin T R141W Mutation Develop Dilated Cardiomyopathy with Calcium Desensitization. *PLoS One*. 2016 Dec 9;11(12):e0167681[**Impact Factor 2.7**]

18. Adela R, Borkar RM, Bhandi MM, Vishwakarma G, Srinivas R*, **Banerjee SK***. Lower vitamin D metabolites levels were associated with increased coronary artery diseases in Indian type 2 diabetes patients. *Scientific Reports* 2016; 6:37593. [\[Impact Factor 4.1\]](#)
19. Kaur G, Padiya R, Adela R, Putcha UK, Sweeya R, Reddy BR, Kumar PK, Chakravarty S, **Banerjee SK***. Garlic and Resveratrol attenuate diabetic complications, loss of β -cells, pancreatic and hepatic oxidative stress in streptozotocin-induced diabetic rats. *Frontiers in Pharmacology*, 2016, 7:360. [\[Impact Factor 3.8\]](#)
20. Sultana R, Bagul PK, Katare PB, Anwar S, Padiya R, **Banerjee SK***. Garlic activates SIRT-3 to prevent cardiac oxidative stress and mitochondrial dysfunction in diabetes, *Life Sciences*, 2016 164:42-51. [\[Impact Factor 3.2\]](#)
21. Kanwal A, Kasetti S, Putcha UK, Asthana S*, **Banerjee SK***. Protein kinase C-mediated sodium glucose transporter 1 activation in precondition-induced cardioprotection. *Drug Design, Development and Therapy*, 2016, 10:2929-2938. [\[Impact Factor 2.9\]](#)
22. Reddy BR, Maitra S, Jhelum P, Kumar KP, Bagul PK, Kaur G, **Banerjee SK**, Kumar A, Chakravarty S. Sirtuin 1 and 7 mediate resveratrol-induced recovery from hyper-anxiety in high-fructose-fed prediabetic rats. *Journal of Biosciences*, 2016, 41(3), 407-417. [\[Impact Factor 1.5\]](#)
23. Adela R, Mohammed SA, Kanwal A, Vishwakarma G, Reddy PNC, **Banerjee SK***. Elevated levels of GDF-15 is associated with increased angiotensin II in hypertensive patients with Type 2 diabetes. *Personalized Medicine*, 2016 13(4):325-336. [\[Impact Factor 1.0\]](#)
24. Khatua TN, Dinda AK, Putcha UK, **Banerjee SK***. Diallyl disulfide ameliorates isoproterenol induced cardiac hypertrophy activating mitochondrial biogenesis via eNOS-Nrf2-Tfam pathway in rats. *Biochemistry and Biophysics Report*, 2016, 5:77–88. [\[Impact Factor: Not yet, new journal\]](#)
25. Kanwal A, Nizami HL, Mallapudi S, Putcha UK, Mohan GK, **Banerjee SK***. Inhibition of SGLT1 abrogates preconditioning-induced cardioprotection against ischemia-reperfusion injury. *Biochem Biophys Res Commun*. 2016 Apr 1;472(2):392-8. [\[Impact Factor 2.5\]](#)
26. Borkar RM, Bhandi MM, Dubey AP, Reddy VG, Komirishetty P, Nandekar PP, Sangamwar AT, Kamal A, **Banerjee SK***, Srinivas R*. An evaluation of the CYP2D6 and CYP3A4 inhibition potential of metoprolol metabolites and their contribution to drug–drug and drug–herb interaction by LC-ESI/MS/MS. *Biomedical Chromatography*, 2016, 30(10):1556-1572. [\[Impact Factor 1.6\]](#)
27. Adela R, Reddy PN, **Banerjee SK***. Alteration of plasma GDF-11 levels in type 2 diabetes patients with cardiovascular complications: A pilot study. *J Practice Cardiovas Sci*, 2015, 1 (3): 262-66. [\[Impact Factor: Not yet, new journal\]](#)
28. Bagul PK, Dinda AK, **Banerjee SK***. Effect of resveratrol on sirtuins expression and cardiac complications in diabetes. *Biochem Biophys Res Commun*, 2015, 468(1-2):221-227. [\[Impact Factor 2.5\]](#)

29. Bagul PK, Deepthi N, Sultana R, **Banerjee SK***. Resveratrol ameliorates cardiac oxidative stress in diabetes through deacetylation of NFkB-p65 and histone 3. *Journal of Nutritional Biochemistry*, 2015, **26**;11:1298–1307. [[Impact Factor 4.4](#)]
30. Adela R, Nethi SK, Bagul PK, Barui AK, Mattapally S, Kuncha M, Patra CR, Reddy PN, **Banerjee SK***. Hyperglycaemia enhances nitric oxide production in diabetes: a study from South Indian patients. *PLOS ONE*. 2015;10(4):e0125270. [[Impact Factor 2.7](#)]
31. Mattapally S, Nizamuddin S, Murthy KS, Thangaraj K, **Banerjee SK***. c.620C>T mutation in GATA4 is associated with congenital heart disease in South India. *BMC Med Genet*. 2015 18;16:7. [[Impact Factor 1.9](#)]
32. Borkar RM, Bhandi MM, Dubey AP, Nandekar PP, Sangamwar AT, **Banerjee SK***, Srinivas R*. Plasma protein binding, pharmacokinetics, tissue distribution and CYP450 biotransformation studies of fidarestat by ultra high performance liquid chromatography-high resolution mass spectrometry. *J Pharm Biomed Anal*. 2015;102:386-99. [[Impact Factor 2.8](#)]
33. Mehrotra A, Kanwal A, **Banerjee SK**, Sandhir R. Mitochondrial modulators in experimental Huntington's disease: reversal of mitochondrial dysfunctions and cognitive deficits. *Neurobiol Aging*. 2015;36(6):2186-200. [[Impact Factor 4.4](#)]
34. Jallapally A, Addla D, Bagul P, Sridhar B, **Banerjee SK**, Kantevari S. Design, synthesis and evaluation of novel 2-butyl-4-chloroimidazole derived peptidomimetics as Angiotensin Converting Enzyme (ACE) inhibitors. *Bioorganic & Medicinal Chemistry* 2015, 23 (13), 3526-3533. [[Impact Factor 2.9](#)]
35. Padiya R, Choudhury D, Borkar R, Srinivas R, Pal Bhadra M, **Banerjee SK***. Garlic attenuates cardiac hypertrophy and oxidative stress via activation of PI3K/AKT/NRF2-Keap1 pathway in fructose-fed diabetic rat. *PLOS ONE*, 2014;9(5):e94228. [[Impact Factor 2.7](#)]
36. Kumbhare RM*, Kosurkar UB, Bagul PK, Kanwal A, Appalanaidu K, Dadmal TL, **Banerjee SK***. Synthesis and evaluation of novel triazoles and mannich bases functionalized 1,4-dihydropyridine as angiotensin converting enzyme (ACE) inhibitors. *Bioorg Med Chem*. 2014;22(21):5824-30. [[Impact Factor 2.9](#)]
37. Putapatri SR, Kanwal A, **Banerjee SK***, Kantevari S*. Synthesis of novel l-rhamnose derived acyclic C-nucleosides with substituted 1,2,3-triazole core as potent sodium-glucose co-transporter (SGLT) inhibitors. *Bioorg Med Chem Lett*. 2014;24(6):1528-31. [[Impact Factor 2.4](#)]
38. Santhoshi A, Mahendar B, Mattapally S, Sadhu PS, **Banerjee SK***, Jayathirtha Rao V*. Synthesis of thio-heterocyclic analogues from Baylis-Hillman bromides as potent cyclooxygenase-2 inhibitors. *Bioorg Med Chem Lett*. 2014;24(8):1952-7. [[Impact Factor 2.4](#)]
39. Reddy NT, Ravinder M, Bagul P, Ravikanti K, Bagul C, Nanubolu JB, Srinivas K, **Banerjee SK***, Rao VJ*. Synthesis and biological evaluation of new epalrestat analogues as aldose reductase inhibitors (ARIs) *Eur J Med Chem.*, 2014;71:53-66. [[Impact Factor 4.8](#)]

40. Kalavagunta PK, Bagul PK, Jallapally A, Kantevari S, **Banerjee SK***, Ravirala N*. Design and green synthesis of 2-(diarylalkyl)aminobenzothiazole derivatives and their dual activities as angiotensin converting enzyme inhibitors and calcium channel blockers. *Eur J Med Chem.* 2014;83:344-54. [\[Impact Factor 4.8\]](#)
41. Choudhury D, Tangutur AD, Khatua TN, Saxena P, **Banerjee SK***, Pal Bhadra M*. A proteomic view of isoproterenol induced cardiac hypertrophy: prohibitin identified as a potential biomarker in rats. *Journal of Translational Medicine* 2013, **11**:130. [\[Impact Factor 4.2\]](#)
42. Addla D, Jelapally A, Kanwal A, **Banerjee SK***, Kantevari S*. Design, synthesis and evaluation of novel 2-hydroxy pyrrolbenzodiazepine-5,11-dione analogues as potent Angiotensin Converting Enzyme (ACE) inhibitors. *Bioorganic & Medicinal Chemistry*, 2013; 21(15):4485-93. [\[Impact Factor 2.9\]](#)
43. **Madabhushi S***, Chinthala N, Kanwal A, Kaur G, **Banerjee SK***. Synthesis of novel 1,2,3-triazole functionalized 2-aryl-naphtho[1,2-d]oxazole derivatives and study of their protein tyrosine phosphatase-1B (PTP1B) inhibitory activity. *Medicinal Chemistry Research*, 2013, 23 (4), 2062-2069. [\[Impact Factor 1.6\]](#)
44. Gupta P, Kanwal A, Putcha UA, Bulani Y, Sojitra B, Khatua TN, Kuncha M, **Banerjee SK***. Cardioprotective effect of ritonavir, an antiviral drug, in isoproterenol induced myocardial necrosis: A new therapeutic implication. *Journal of Translational Medicine*, 2013, 11:80 [\[Impact Factor 4.2\]](#)
45. Kanwal A, Singh SP, Grover P, **Banerjee SK***. Development of a Cell Based Non-radioactive Glucose Uptake Assay System for SGLT1 and SGLT2. *Analytical Biochemistry*, 2012, 429 (1):70-75. (Cited in Nature India, doi:10.1038/nindia. 2012. Published online 25 September 2012) [\[Impact Factor 2.2\]](#)
46. Raju B, Ramesh M, Borkar RM, Padiya R, **Banerjee SK**, Srinivas R*. Identification and structural characterization of in vivo metabolites of ketorolac using liquid chromatography electrospray ionization tandem mass spectrometry (LC/ESI-MS/MS)" *Journal of Mass Spectrometry*, 2012, 47(7): 919-931. [\[Impact Factor 2.1\]](#)
47. Bagul PK, Middela H, Matapally S, Padiya R, Bastia T, Madhusudana K, Reddy BR, Chakravarty S, **Banerjee SK***. Attenuation of Insulin resistance, metabolic syndrome and hepatic oxidative stress by resveratrol in fructose-fed rats. *Pharmacological Research*, 2012, 66(3): 260-268. [\[Impact Factor 4.9\]](#)
48. Ramesh M, Borkar RM, Padiya R, **Banerjee SK***, Srinivas R*. *In vivo* metabolic investigation of moxifloxacin using LC/Q-TOF-ESI-MS/MS in combination with online hydrogen/deuterium (H/D) exchange technique. *Rapid Communications in Mass Spectrometry*, 2012, 26(16): 1817-1831. [\[Impact Factor 1.9\]](#)
49. Ravinder M, Mahendar B, Mattapally S, Hamsini KV, Reddy TN, Rohit C, Srinivas K*, **Banerjee SK***, Rao VJ*. Synthesis and evaluation of novel 2-pyridone derivatives as inhibitors

- of phosphodiesterase3 (PDE3): A target for heart failure and platelet aggregation. *Bioorganic and Medicinal Chemistry Letters*, 2012; 22 (18), 6010-6015. [\[Impact Factor 2.4\]](#)
50. Khatua TK, Padiya R, Karnewar S, Kuncha M, Agawane SB, Kotamraju S, **Banerjee SK***. Garlic provides protection to mice heart against isoproterenol-induced oxidative damage: Role of nitric oxide. *Nitric Oxide: Biology and Chemistry*, 2012, 27(1):9-17. [\[Impact Factor 4.3\]](#)
51. Raju B, Ramesh M, Borkar RM, Padiya R, **Banerjee SK***, Srinivas R*. Simultaneous determination of moxifloxacin and ketorolac in rat plasma using LC-ESI-MS/MS method: Application to pharmacokinetics study. *Biomedical Chromatography*, 2012; 26(11):1341-7. [\[Impact Factor 1.6\]](#)
52. Sojitra B, Bulani Y, Putcha UK, Gupta P, Kanwal A, Kuncha M, **Banerjee SK***. Nitric oxide synthase inhibition abrogates hydrogen sulfide-induced cardioprotection in mice. *Molecular and Cellular Biochemistry*, 2012, 360:61-69. [\[Impact Factor 2.5\]](#)
53. Padiya R, Khatua TN, Bagul PK, Kuncha M, **Banerjee SK***. Garlic Improves Insulin Sensitivity and Associated Metabolic Syndromes in Fructose Fed Rats. *Nutrition and Metabolism*, 2011, 8:53. [\[Impact Factor 3.4\]](#)
54. Kantevari S*, Addla D, Bagul PK, Sridhar B, **Banerjee SK***. Synthesis and evaluation of novel 2-butyl-4-chloro-1-methylimidazole embedded chalcones and pyrazoles as Angiotensin Converting Enzyme (ACE) inhibitors. *Bioorganic & Medicinal Chemistry*, 2011, 19(16): 4772-4781. [\[Impact Factor 2.9\]](#)
55. **Banerjee SK**, Wang DW, Alzamora R, Huang XN, Pastor-Soler NM, Hallows KR, McGaffin KR, Ahmad F. SGLT1, a Novel Cardiac Glucose Transporter, Mediates Increased Glucose Uptake in PRKAG2 Cardiomyopathy. *J Mol Cell Cardiol*. 2010, 49(4):683-92. [\[Impact Factor 5.3\]](#)
56. **Banerjee SK**, McGaffin KR, Huang XN, Ahmad F. Activation of cardiac hypertrophic signaling pathways in a transgenic mouse with the human PRKAG2 Thr400Asn mutation. *Biochim Biophys Acta: Mol Basis of Dis* 2010;1802(2):284-91. [\[Impact Factor 5.1\]](#)
57. **Banerjee SK**, McGaffin KR, Pastor-Soler NM, Ahmad F. SGLT1 is a novel cardiac glucose transporter that is perturbed in disease states. *Cardiovasc Res*. 2009; 84(1):111-118. [\[Impact Factor 6.3\]](#)
58. Hanczko R, Fernandez DR, Doherty E, Qian Y, Vas G, Niland B, Telarico T, Garba A, **Banerjee SK**, Middleton FA, Barrett D, Barcza M, Banki K, Landas SK, Perl A. Prevention of hepatocarcinogenesis and increased susceptibility to acetaminophen-induced liver failure in transaldolase-deficient mice by N-acetylcysteine. *J Clin Invest*. 2009; 119(6):1546-1557. [\[Impact Factor 13.2\]](#)
59. Fernandez DR, Telarico T, Bonilla E, Li Q, **Banerjee SK**, Middleton FA, Phillips PE, Crow MK, Oess S, Muller-Esterl W, Perl A. Activation of mammalian target of rapamycin controls the loss of TCRzeta in lupus T cells through HRES-1/Rab4-regulated lysosomal degradation. *Journal of Immunology*. 2009;182(4):2063-2073. [\[Impact Factor 4.5\]](#)

60. Ahmad F, **Banerjee SK**, Lage ML, Huang XN, Smith SH, Saba S, Rager J, Conner DA, Janczewski AM, Tobita K, Tinney JP, Moskowitz IP, Perez-Atayde AR, Keller BB, Mathier MA, Shroff SG, Seidman CE, Seidman JG. The role of cardiac troponin T quantity and function in cardiac development and dilated cardiomyopathy. *PLoS ONE* 2008;3(7):e2642. [[Impact Factor 2.7](#)]
61. Qian Y, **Banerjee SK**, Grossman CE, Wendy Amidon¹, Nagy G, Barcza M, Niland B, Karp DR, Middleton FA, Banki K, Perl A. Transaldolase deficiency influences the pentose phosphate pathway, mitochondrial homeostasis, and apoptosis signal processing. *Biochemical Journal*. 2008; 415(1):123-34. [[Impact Factor 3.8](#)]
62. **Banerjee SK**, Ramani R, Saba S, Rager J, Tian R, Mathier MA, Ahmad F. A *PRKAG2* mutation causes biphasic changes in myocardial AMPK activity and does not protect against ischemia. *Biochem. Biophys. Res. Commun.* 2007 Aug 24;360(2):381-7. [[Impact Factor 2.5](#)]
63. Perl A, Qian Y, Chohan KR, Shirley CR, Amidon W, **Banerjee SK**, Middleton FA, Conkrite KL, Barcza M, Gonchoroff N, Suarez SS, Banki K. Transaldolase is essential for maintenance of the mitochondrial transmembrane potential and fertility of spermatozoa. *Proc Natl Acad Sci U SA*. 2006;103(40):14813-8. [[Impact Factor 9.5](#)]
64. Devi R, **Banerjee SK**, Sood S, Dinda AK, Maulik SK. Extract from *Clerodendron colebrookianum* Walp protects rat heart against oxidative stress induced by ischemic-reperfusion injury (IRI). *Life Sciences*. 2005; 77(24):2999-3009. [[Impact Factor 3.2](#)]
65. Gauthaman K, **Banerjee SK**, Dinda AK, Ghosh CC, Maulik SK. *Terminalia arjuna* (Roxb.) protects rabbit heart against ischemic-reperfusion injury: role of antioxidant enzymes and heat shock protein. *Journal of Ethnopharmacology*. 2005; 96(3):403-409. [[Impact Factor 3.1](#)]
66. Rajak S, **Banerjee SK**, Sood S, Dinda AK, Gupta YK, Gupta SK and Maulik SK. *Emblica officinalis* causes myocardial adaptation and protects against oxidative stress in ischemic-reperfusion injury in rats. *Phytotherapy Research*. 2004;18(1):54-60. [[Impact Factor 3.7](#)]
67. **Banerjee SK**, Sood S, Dinda AK, Das TK, Manchanda SC, Maulik SK. Chronic oral administration of raw garlic protects against isoproterenol-induced myocardial necrosis in rat. *Comp Biochem Physiol C Toxicol Pharmacol*. 2003; 136(4):377-386. [[Impact Factor 2.4](#)]
68. Devi Rajlakshmi, **Banerjee SK**, Sood S, Maulik SK. *In-vitro* and *in-vivo* antioxidant activity of different extracts of the leaves of *Clerodendron colebrookianum* Walp, (Nefafu). *Journal of Pharmacy and Pharmacology*. 2003, 55(12):1681-1686. [[Impact Factor 2.3](#)]
69. Mukherjee S., **Banerjee S.K.**, Maulik M., Dinda A.K., Talwar K.K., Maulik S.K. Garlic protects against acute adriamycin induced cardiotoxicity: Role of endogenous antioxidants and inhibition of TNF- α expression. *BMC Pharmacology*. 2003, 3(1):16. [[Impact Factor 2.10](#)]
70. **Banerjee SK**, Dinda AK, Manchanda SC, Maulik SK. Chronic garlic administration protects rat heart against oxidative stress induced by ischemic reperfusion injury. *BMC Pharmacology*. 2002, 2:16. [[Impact Factor 2.10](#)]

[Featured in BMC Press Release (Sept. 9, 2002) and Innovations report (Sept. 10, 2002), Breaking news in 'Food & Drink Europe.com' & 'NUTRA Ingredients.com Europe' (Sept. 10, 2002)]

71. **Banerjee SK.**, Maulik M., Mancahanda SC., Dinda AK., Gupta SK., Maulik SK. Dose dependent induction of endogenous antioxidant by chronic administration of garlic in rat heart. *Life Sciences* 2002, 70 (13): 1509-1518. [\[Impact Factor 3.2\]](#)
72. **Banerjee SK**, Maulik M., Manchanda SC, Dinda AK, Das TK and Maulik SK. Garlic induced alteration in rat liver and kidney morphology and associated changes in endogenous antioxidant status. *Food and Chemical Toxicology* 2001, 39(8):793-797. [\[Impact Factor 3.9\]](#)
73. Das AK, Mandal SC, **Banerjee SK**, Sinha S, Saha BP and Pal M. Studies on the hypoglycemic activity of *Punica granatum* seed in streptozotocin induced diabetic rats. *Phytotherapy Research* 2001, 15 (7): 628-629. [\[Impact Factor 3.7\]](#)
74. Bhakta T, **Banerjee SK**, Maity TK, Mandal SC, Saha BP and Pal M. Hepatoprotective activity of Cassia fistula leaf extract. *Phytomedicine*. 2001, 8(3): 220-224. [\[Impact Factor 3.6\]](#)
75. Bhakta T, Mukherjee PK, Mukherjee K, **Banerjee SK**, Mandal SC, Maity TK, Pal M and Saha BP. Evaluation of hepatoprotective activity of *Cassia fistula* leaf extract. *Journal of Ethnopharmacology*, 1999; 66:277-282. [\[Impact Factor 3.4\]](#)
76. Das AK, Mandal SC, **Banerjee SK**, Sinha S, Das J, Saha BP and Pal M. Studies on antidiarrhoeal activity of *Punica granatum* seed extract in rat. *Journal of Ethnopharmacology*. 1999, 68:205-208. [\[Impact Factor 3.4\]](#)

Review Papers

77. Senapati T., Kothidar A., Banerjee S. Das B. (2019). Insights Into the Gastrointestinal Tract Microbiomes of Indian Population *J. Bioscience* (In press) [\[Impact Factor: 1.8\]](#)
78. Orhan I, Azzini E, Martorell M, Ahmad Z, Zucca P, Armstrong L, Martins N, Rigano D, **Banerjee SK**, Oluwaseun AC, Salehi B, Mohammed SA, Sharopov F, Selamoglu Z, Sureda A. Allicin and Health: A comprehensive review. *Trends in Food Science and Technology*, 2019 (In press). [\[Impact Factor: 8.5\]](#)
79. Sarkar S, Das B*, **Banerjee SK***. Insights into the human gut microbiome and cardiovascular diseases. *J Prac Cardiovac Sci*, 2018, 4 (1): 10-14. [\[Impact Factor: New journal\]](#).
80. Katare P, **Banerjee SK***. Repositioning of Drugs in Cardiometabolic Disorders: Importance and Current Scenario. *Current Topics in Medicinal Chemistry*, 2016, 16(19):2189-200. [\[Impact Factor 3.4\]](#)
81. Adela R, **Banerjee SK***. GDF-15 as a Target and Biomarker for Diabetes and Cardiovascular Diseases: A Translational Prospective. *J Diabetes Res*. 2015;2015:490842. [\[Impact Factor 3.0\]](#)
82. Bagul PK, **Banerjee SK***. Application of resveratrol in diabetes: rationale, strategies and

- challenges. *Current Molecular Medicine*. 2015;15(4):312-30. [Impact Factor 2.2]
83. Khatua TN, Adela R, **Banerjee SK***. Garlic and cardioprotection: Insights into molecular mechanisms. *Canadian Journal of Physiology and Pharmacology*, 2013; 91(6):448-58. [Impact Factor 2.0]
84. Bagul P, **Banerjee SK***. Insulin Resistance, Oxidative Stress and Cardiovascular Complications: Role of Sirtuins. *Current Pharmaceutical Design*, 2013;19(32):5663-77. [Impact Factor 2.4]
85. Padiya R, **Banerjee SK***. Garlic as an Anti-diabetic Agent: Recent Progress and Patent Reviews. *Recent Patents on Food, Nutrition & Agriculture*, 2013;5(2):105-27. [Impact Factor 0.0]
86. Kanwal A, **Banerjee SK***. Patent review of sodium glucose co-transporter (SGLT) inhibitors: A novel target for diabetes. *Pharmaceutical Patent Analyst*, 2013, 2(1):77-91. [Impact Factor 0.0]
87. Mattapally S, **Banerjee SK***. Nitric oxide: redox balance, protein modification and therapeutic potential in cardiovascular system. *The IIOAB Journal*, 2011, 2(6): 29-38. [Impact Factor 0.0]
88. **Banerjee SK**, Mukherjee PK and Maulik SK. The antioxidant effect of garlic. The good, the bad and the ugly. *Phytotherapy Research* 2003, 17(2): 1-10. [Impact Factor 3.7]
89. **Banerjee SK**, Maulik SK. Effect of garlic on cardiovascular disorders: a review. *Nutrition Journal* 2002, 1:4 [Impact Factor 3.6]
[Top 10 most accessed article from 'Nutration Journal' for all time since it published, <http://www.nutritionj.com/mostviewedalltime>]

Book Chapters

1. Nizami HL, **Banerjee SK**. Mechanism of action of Drugs Treating Endothelial Dysfunction in Diabetes mellitus. In: Mechanisms of Vascular Defects in Diabetes Mellitus, Edited by **Kartha, C.C., Ramachandran, Surya, Pillai, Radhakrishna** (Eds.) Springer Publisher; 2017: 483-514.
2. Adela R, **Banerjee SK**. Novel biomarkers to understand cardiovascular complications in diabetes. In: Role of biomarker in medicine. InTech Press, August 2016.
3. Maulik SK, **Banerjee SK**. Uses of herbals in cardiac diseases: Priority of evidence over belief. In: Evidence-based validation of herbal medicine. Edited by Mukherjee PK. Elsevier Inc, 2015.
4. **Banerjee SK**, Maulik^[1]_[SEP] SK. Garlic in Cardiovascular Health: Winnowing the Fact from Artifacts. In: Cardiovascular Diseases: Nutritional and Therapeutic Interventions. Edited by Nilanjana Maulik. CRC Press, Taylor & Francis, UK April, 2013
5. **Banerjee SK**. Role of garlic on cardiovascular Disorders: A new look of an old healing herb. In: Herbal Drugs: a modern approach to understand them better. Edited by Mandal SC. New Central Book Agency (P) Ltd, (London), May 2011.

Patent Granted/Applied

Patent Granted: 2, Patent Applied: 2

Patent Granted

1. Budde Mahendar, Saidulu Mattapally, Mettu Ravinder, **Sanjay K Banerjee**, Vaidya Jathirtha Rao.

Title: Pyridopyrimidine based derivatives useful as potential Phosphodiesterase3 (PDE3) agents and process for the preparation thereof.

Application No. 14/988830

US patent No.: 9505760

Publication Date: 2016/7/7

2. Budde Mahendar, Saidulu Mattapally, Mettu Ravinder, **Sanjay K Banerjee**, Vaidya Jathirtha Rao.

Title: Indolizinone based derivatives useful as potential Phosphodiesterase3 (PDE3) agents and process for the preparation thereof.

Application No. 14/168,370

US patent No.: 9562045

Publication Date: 2016/2/2

Patent Applied

3. G J Kumar, Budde Mahendar, Saidulu Mattapally, **Sanjay K Banerjee**, Vaidya Jathirtha Rao.

Title: 2-Pyridone based compounds useful as potential Phosphodiesterase 3A (PDE3A) inhibitors and a process for the preparation thereof.

WIPO Application No. WO2017072796A1

File Date: 04/05/2017

4. NC Talukdar, **Sanjay K Banerjee**, et al.,

Title: A Herbal Composition from *Premna herbacea*, useful for prevention of obesity and type 2 diabetes and a method for its extraction

Date of filing: 07-12-2018

India patent application number: 201831046382

Publication date (U/S 11A): 25/01/2019

5. S Kumari, **SK Banerjee**, R Devi, D Mahajan, Y Kumar.

Title: Method of preparing nutraceutical and pharmaceutical products based on *Musa balbisiana* and uses thereof

Date of filing: 16-04-2019

India patent application number: 201911015320

Invited lecture(s) in any scientific International Conference Symposium:

- 1. Title: Serum protein signature of CAD in T2DM.** 16TH Annual conference of International Society of Heart Research (ISHR) Indian section, Organized by RUHS college of medical Sciences, 15-17th Feb, **2019**, Jaipur.
- 2. Title: TLR4 activation promotes cardiac fibrosis in rats through p53-caspase pathway.** IACS-INDIA 2019 International Conference on Translational Research in Cardiovascular Sciences organized by Sri Jayadeva Institute of Cardiovascular Sciences and Research, 15th to 17th Feb, **2019** at NIMHANS, Bengaluru.
- 3. Title: Vitamin D and Cardiovascular disease.** Quality Improvement Programme (Pharmacy), Sponsored by AICTE and organized by DPSRU, New Delhi, 12th March, **2018**.
- 4. Title: Activation of VDR prevents cardiac dysfunction in 'high-fat high-fructose'-fed insulin resistance rats.** 15th Annual Conference of International Society of Heart Research (ISHR), PGIMER, Chandigarh, 16th -18th February **2018**.
- 5. Title: Modulation of SIRT-1 and SIRT-3 by Resveratrol: Therapeutic Implications in Diabetic Heart.** 10th International Conference of the International Academy of Cardiovascular Sciences (IACS): Recent Advances in Cardiovascular Sciences. 8-10th Feb, **2018**. Madurai Kamaraj University, Madurai, Tamilnadu.
- 6. Title: Animal Models in Cardiovascular Research.** Workshop on “Techniques in cardiovascular biology research”, 5-6th Jan, **2018**; Organised by Rajiv Gandhi Centre for Biotechnology, Trivandrum.
- 7. Title: Toll Like Receptor 4 (TLR 4): A potential therapeutic target for cardiac hypertrophy.** Conference on "Molecular Medicines for Lifestyle Diseases: Emerging Targets and Approaches" at CSIR-Central Drug Research Institute, Lucknow, November 20-21, **2017**.
- 8. Title: Identification of Active Metabolites from Garlic: Translation from Bench to Bed?** Workshop on “Translational Research on Natural Products for Therapeutic Use” organized by IASST, Guwahati and Indian Society of Translational Research (ISTR), 21st Nov, **2017**.
- 9. Title: Vitamin D deficiency, Diabetes and Coronary Artery Disease.** Conference on Drug Discovery & Development (Focus on Cancer & Diabetes). 16th & 17th March, **2017**, Organized by NIPER, Hyderabad.
- 10. Title: The impact of lower vitamin D metabolites levels on coronary artery disease in type 2 diabetes patients in India.** 14th Annual Conference of International Society of Heart Research (ISHR) Indian section, CSIR-Institute of Genomics and Integrative Biology, 27-29th January **2017**.
- 11. Title: My journey in science through Ramalingaswami Fellowship.** 7th Ramalingaswami Conclave organised by Institute of Bioresources and Sustainable Development (IBSD), Imphal. 28-30 Aug, **2017**.

12. Title: **Regulation and function of SGLT1, a novel glucose transporter in heart.** 3rd Annual Conference of Indian Society of Translational Research (ISTR), Organized by KIIT, Bhubaneswar, Oct, **2016**.
13. Title: **Experimental Study to Find the Role of SIRT1 on Cardiac Complication in Diabetes.** 13th Annual Conference of International Society of Heart Research (ISHR) Indian section, Indian Institute of Technology, 22-24th January **2016**.
14. Title: **Garlic and diallyl disulfide attenuates cardiac hypertrophy via activation of mitochondrial biogenesis.** International Symposium on Ethnopharmacology: Validation of Traditional Medicine, 4th Jan, **2016**; Organised by Society for Ethnopharmacology and Pune College of Pharmacy, Pune.
15. Title: **Garlic and cardiac hypertrophy: Identification of molecular mechanism and active principal responsible for beneficial effect.** Indo-Canadian Symposium on “Heart Failure: Progress and Prospect”, International Academy of Cardiovascular Sciences (IACS), 13-14th March, **2015**, Organized by Rajiv Gandhi Centre for Biotechnology, Trivandrum.
16. Title: **Role of garlic and its metabolites on cardiac hypertrophy: Exploring a novel mechanism.** 12th Annual Conference of International Society of Heart Research (ISHR) Indian section, Indian Institute of Technology, March **2015**; Organized by JNU, New Delhi.
17. Title: **Role of nitric oxide on cardiovascular complications in diabetes: A study from Bench to Bed.** Annual Conference of “Hypertension Society of India” BPCON, Faridabad, 20-22nd Nov, **2015**.
18. Title: **Cardiovascular complications in diabetes: Study from Bench to Bed.** Conference organized by J S Yadav Foundation, CSIR-IICT, Hyderabad, Aug, **2015**.
19. Title: **Ischemic preconditioning protects rat heart against ischemia reperfusion injury: Role of a novel glucose transporter, SGLT1.** 11th Annual Conference of International Society of Heart Research (ISHR) Indian section, 8-9th Feb, **2014**; Organized by NIPER, Mohali.
20. Title: **Cardioprotective effect of Garlic: Exploring NO and H2S signaling pathway.** 10th Annual Conference of International Society of Heart Research (ISHR) Indian section, Jan, **2012**; Organized by AIIMS, New Delhi.
21. Title: **SGLT1: A novel glucose transporter in heart.** International conference on “Imbibing pharmaceutical knowledge to the professionals” 28-31st Jan, **2011**; organized by Lalitha College of Pharmacy, Hyderabad.
22. Title: **Diabetic Cardiomyopathy: Insight into its pathophysiology and therapeutic approaches.** Annual conference of Association of Physiologist and Pharmacologist of India (APPICON 2011) AIIMS, New Delhi, India, December 13 - 17, **2011**.

23. Title: **Application of transgenic mouse in natural product research and drug discovery.** National Conference on “Emerging Trends in Natural Product Research” organizing by Jadavpur University, Kolkata, Feb 12-13, 2011.
24. Title: **Target Identification and Validation.** Drug Discovery: Drug Design, Development, Delivery and preclinical Studies (D4PS) Conference organized jointly by IICT & NIPER, Hyderabad, Oct 8-9, 2010.
25. Title: **SGLT-1, A Novel target for drug development in cardiomyopathy.** Mini symposium organized by CDRI, Lucknow for Diamond Jubilee Lecture Series, Aug 11, 2010.
26. Title: **Transgenic mouse models in cardiovascular disease and drug discovery.** International Conference on integrative & Personalized Medicine and 42nd Annual Conference of the Indian Pharmacological Society. Kolkata Dec 10-12, 2009.
27. Title: **Utilization of Genetic Mouse Model in Cardiovascular Disease: A Tool for Drug Discovery.** Quality Improvement Programme (Pharmacy), Sponsored by AICTE and organized by Kakatiya University, Warangal, Sep 2, 2009.

Research Supports/ Projects received

Present Extramural Funding

- **Title of Project:** Identification of transcription factors perturbed at early stages of heart development during pregestational diabetes.
Agency: Department of Biotechnology (DBT), Government of India, New Delhi, India.
Dates of Award: March 2, 2017
Period: 2016-2018
Amount: 40 lakhs
- **Project Number:** BT/PR16804/NER/95/294/2015
Title of Project: In vivo hypocholesterolemic effect of bioconjugates of starch nanoparticles with gamma oryzanol and tocotrienols extracted from rice bran. (Twining Project)
Agency: Department of Biotechnology (DBT), Government of India, New Delhi, India.
Dates of Award: Nov 10, 2016
Period: 2016-2018
Amounts: 79.60 lakhs
- **Project Number:** DBT-NER/Health/42/2013
Title of Project: Integrating herbal Medicine of NER with Contemporary Approaches to develop Therapeutic Strategies for metabolic syndrome (Multi-institutional Project)
Agency: Department of Biotechnology (DBT), Government of India, New Delhi, India.
Dates of Award: June 16, 2016
Period: 2016-2018
Amounts: 770.69 lakhs

Completed Extramural Grants

- **Project number:** No. BT/03/06/2009-FNS
Agency: Department of Biotechnology (DBT), Government of India, New Delhi, India.
Title of Project: Understanding the role of Sirtuins as inflammatory modulators in diabetic cardiomyopathy and its regulation by nutritional agent, resveratrol.
Amounts: 56 lakhs
Dates of award: Awarded recently, April 2013 –Sept 2016 (3 years)
- **Project Number:** SR/S0/AS-18/2011
Agency: Department of Science and Technology (DST), Govt. of India, New Delhi
Title of project: Cardio-protective effect of garlic: Role of nitric oxide and mitochondrial biogenesis
Amounts: 32 lakhs
Dates of award: June 2012-May 2015 (3 years)
- **Project number:** BT/PR13768/MED/30/300/2010
Agency: Department of Biotechnology (DBT), Government of India, New Delhi, India.
Title of Project: Understanding the regulation and function of SGLT1 in heart
Amounts: 76 lakhs
Dates of award: April 2011-March 2014 (3 years)
- **Project number:** BT/HRD/35/02/2006 (Ramalingaswami Fellowship)
Agency: Department of Biotechnology (DBT), Government of India, New Delhi, India.
Title of Project: Elucidation of the molecular and genetic basis for familial cardiomyopathy
Amounts: 74 lakhs
Dates of award: June, 2009 (5 years)
- **Project number:** 0725359U
Agency: American Heart Association, USA
Title of Project: Elucidation of the molecular basis of glycogen cardiomyopathy in a transgenic mouse model (PRKAG2 T400N)
Amounts: \$80,000
Dates of award: July, 2007 (2 years)
- **Project number:** SR/FTP/LS-372/2001 (Fast Track Proposal for Young Scientist 2001)
Agency: Department of Science and Technology, Government of India, New Delhi, India.
Title of Project: Evaluation of antioxidant potential of lycopene in ischemia-reperfusion injury in rat heart
Amounts: 10 lakhs
Dates of award: July, 2002 (3 years)

Organizing of Conference and workshop

1. Organized a conference “Cardiovascular Research Convergence 2017: A scientific forum for exchanging research views between clinicians and basic scientists” organized by

Translational Health Science and technology Institute (THSTI), Faridabad on 12th Aug, 2017 at THSTI. Organizing Secretary: Sanjay K Banerjee.

2. Organized a workshop “Research Tools for Drug Discovery in Metabolic Disorder” organized by Translational Health Science and technology Institute (THSTI), Faridabad on March 27-28, 2018 at THSTI. Organizing Secretary: Sanjay K Banerjee.

Activity in college education

I am a part of one educational programme named “SCIENCE SETU” to promote science among college undergraduate students. The extent of commitment of this programme is at least 12 hours of engagement (lectures, interactions, discussion, debate etc) per academic year. Myself with others visited three colleges i.e., Maitreyi College, Manav Rachna International College and Shaheed Rajguru College of Applied Sciences for Women (SRCASW), and conducted workshop on “Drug development in today’s era”.

References

1. Prof. Subir K Maulik, MD, PhD

Professor
Department of Pharmacology
All India institute of medical Sciences (AIIMS)
New Delhi-110029
E mail: skmaulik@gmail.com

2. Dr. Ferhaan Ahmad, MD, PhD

Associate Professor of Internal Medicine and Radiology
Director, Cardiovascular Genetics Program
Division of Cardiovascular Medicine, Department of Internal Medicine
University of Iowa Carver College of Medicine
Iowa City, IA 52242, USA
E-mail: ferhaan-ahmad@uiowa.edu

3. Dr. J S Yadav, PhD

Bhatnagar Fellow and Ex-Director, CSIR-IICT
Indian Institute of Chemical Technology
Tarnaka, Hyderabad-500007
E Mail: yadav@iict.res.in