

CURRICULUM VITAE

Ratnakar Tiwari, Ph.D.

University of South Florida

Department of Molecular Pharmacology and Physiology

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I. PERSONAL

1. NAME: Ratnakar Tiwari

2.HIGHEST ACADEMIC DEGREE: Ph.D. in Biochemistry

3. CURRENT ACADEMIC RANK: Research Associate (Research Faculty)

4. CURRENT TRACK OF APPOINTMENT: Research

5. PRIMARY DEPARTMENT: Molecular Pharmacology and Physiology, University of South Florida, Tampa, USA

II. HIGHER EDUCATION

1. Institutional

2006-2009	B.Sc. Lucknow Christian P.G. College, University of Lucknow, India.
2010-2012	M.Sc. in Biotechnology. Babasaheb Bhimrao Amedkar University, Lucknow, India.
2015-2018	PhD. in Biochemistry. Babu Banarasi Das University, Lucknow, India.
2018- 2019	Postdoctoral Fellow. University of Kansas Medical Center, Kansas City, KS, USA.
2019-2024	Postdoctoral Fellow. Northwestern University, Chicago, IL, USA.

2. Non-Institutional: N/A

3. Certifications and licensure: N/A

III. PUBLICATIONS

RESEARCH ARTICLES

1. **Tiwari R.[#]**, Kravtsova O., Dissanayake L.V., Lowe M., Xu B., Levchenko V., Didik S., Bohovyk R., Ilatovskaya D.V., Palygin O., and Staruschenko A.[#]. **2026**. Longitudinal multi-organ transcriptomic atlas of salt-induced hypertension. *JCI insight*. PMID: 40950090. [**#-co corresponding author**].
2. Dissanayake LV, Zietara A, **Tiwari R**, Lowe M, Kravtsova O, Levchenko V, Bohovyk R, Gumz ML, Staruschenko A. **2026**. Dietary salt impairs circadian physiological metabolic adaptations in salt-sensitive hypertension. *Function (Oxf)*. 2026 Mar 11. PMID: 41811151.
3. Xu B, Semenikhina M, **Tiwari R**, Levchenko V, Kravtsova O, Lowe M, Palygin O, Staruschenko A. **2026**. Disrupted renal clock and blood pressure rhythms in type 2 diabetic nephropathy. *Clin Sci (Lond)*. 2026. PMID: 41552921.
4. Sharma R.*, **Tiwari R.***, O'Sullivan J., Borkowski G.S., An S.Y., Thorp E.B., Chandel N.S., Quaggin S.E., and Kapitsinou P.P. **2025**. Endothelial prolyl hydroxylase 3 mitigates maladaptive inflammation to promote post-ischemic kidney repair. *Kidney Int*. PMID: 41692346. [***-equal contribution**].
5. Kravtsova O., Tan Y., Levchenko V., Kovalenko E., **Tiwari R.**, Zietara A., Bohovyk R., Dissanayake L.V., Van T.T., Sharp T.E. III, Geurts A.M., Palygin O., Rinschen M.M., Staruschenko A. **2025**. MCD enzyme deficiency drives early mortality and multiorgan metabolic disruption in Dahl salt-sensitive rats. *iScience*. 1:114505.
6. Bishop B.Y., Sharma S.H., **Tiwari R.**, Yuk S.A., Almunif S., Quaggin S.E., Scott E.A., and Kapitsinou P.P. **2025**. Enabling organ- and injury-specific nanocarrier targeting via surface-functionalized PEG-b-PPS micelles for acute kidney injury. *Nanoscale Horizons*. 2025; 10:3423–3432.
7. Singh S., Singh N., Chauhan A., Koshta K., Baby S., **Tiwari R.**, Jagdale PR, Kumar M, Sharma V, Singh D, Srivastava V. **2025**. Prenatal arsenic exposure alters EZH2/H3K27me3 to induce RKIP/NF-kB/ERK1/2-mediated early-onset kidney disease in mouse offspring. *Environ Sci Pollut Res Int*. 2025 Mar; 32(13):8498-8517.
8. **Tiwari R.**, Sharma R., Rajendran G., Borkowski G.S., An S.Y., Schonfeld M., O'Sullivan J., Schipma M.J., Zhou Y., Courbon G., David V., Quaggin S.E., Thorp E., Chandel N.S., and Kapitsinou P.P. **2024**. Post-ischemic inactivation of HIF prolyl hydroxylases in endothelium promotes maladaptive kidney repair by inducing glycolysis. *J Clin Invest*, 2;135(3):e176207.
9. Singh RD. *, **Tiwari R. ***, Sharma V., Khan H., Gangopadhyay S., Singh S., Koshta K., Shukla S., Arjaria N., Mandrah K., Jagdale PR., Patnaik S., Roy SK., Singh D., Giri AK., Srivastava V. **2022**. Prenatal arsenic exposure induces immunometabolic alteration and renal injury in rats. *Front Med (Lausanne)*. 2022; 9:1045692. [***-equal contribution**]
10. **Tiwari R.**, Bommi PV., Gao P., Schipma MJ., Zhou Y., Quaggin SE., Chandel NS., Kapitsinou PP. **2022**. Chemical inhibition of oxygen-sensing prolyl hydroxylases impairs angiogenic competence of human vascular endothelium through metabolic reprogramming. *iScience*. 2022 Oct 21; 25(10):105086.
11. **Tiwari R.[#]**, Singh RD., Singh S., Singh D., Srivastav AK., Kumar M., Srivastava V.[#]. **2022**.

Gestational exposure to silver nanoparticles enhances immune adaptation and protection against streptozotocin-induced diabetic nephropathy in mice offspring. **Nanotoxicology**. 2022 May; 16(4):450-471. [**#-co corresponding author**].

12. Sharma V., Gangopadhyay S., Shukla S., Chauhan A., Singh S., Singh RD., **Tiwari R.**, Singh D., Srivastava V. **2022**. Prenatal exposure to arsenic promotes sterile inflammation through the Polycomb repressive element EZH2 and accelerates skin tumorigenesis in mouse. **Toxicol Appl Pharmacol**. 2022 May 15; 443:116004.
13. **Tiwari R.**, Kapitsinou PP. **2022**. Role of Endothelial Prolyl-4-Hydroxylase Domain Protein/Hypoxia-Inducible Factor Axis in Acute Kidney Injury. **Nephron**. 2022; 146(3):243-248.
14. Torosyan R., Huang S., Bommi PV., **Tiwari R.**, An SY., Schonfeld M., Rajendran G., Kavanaugh MA., Gibbs B., Truax AD., Bohney S., Calcutt MW., Kerr EW., Leonardi R., Gao P., Chandel NS., Kapitsinou PP. **2021**. Hypoxic preconditioning protects against ischemic kidney injury through the IDO1/kynurenine pathway. **Cell Rep**. 2021 Aug 17; 36(7):109547.
15. Singh RD., Koshta K., **Tiwari R.**, Khan H., Sharma V., Srivastava V. **2021**. Developmental Exposure to Endocrine Disrupting Chemicals and Its Impact on Cardio-Metabolic-Renal Health. **Front Toxicol**. 2021; 3:663372.
16. **Tiwari R.**, Singh RD., Binwal M., Srivastav AK., Singh N., Khan H., Gangopadhyay S., Argaria N., Saxena PN., Roy SK., Kumar M., Sharma V., Srivastava V. **2021**. Perinatal exposure to silver nanoparticles reprograms immunometabolism and promotes pancreatic beta-cell death and kidney damage in mice. **Nanotoxicology**. 2021 Jun; 15(5):636-660.
17. Rajendran G., Schonfeld MP., **Tiwari R.**, Huang S., Torosyan R., Fields T., Park J., Susztak K., Kapitsinou PP. **2020**. Inhibition of Endothelial PHD2 Suppresses Post-Ischemic Kidney Inflammation through Hypoxia-Inducible Factor-1. **J Am Soc Nephrol**. 2020 Mar; 31(3):501-516.
18. Bhattacharya D., **Tiwari R.**, Bhatia T., Purohit MP., Pal A., Jagdale P., Mudiam MKR., Chaudhari BP., Shukla Y., Ansari KM., Kumar A., Kumar P., Srivastava V., Gupta KC. **2019**. Accelerated and scarless wound repair by a multicomponent hydrogel through simultaneous activation of multiple pathways. **Drug Deliv Transl Res**. 2019 Dec; 9(6):1143-1158.
19. Singh AK., **Tiwari R.**, Singh VK., Singh P., Khadim S. R., Singh U., Srivastava V., Hasan S., Asthana R. **2019**. Green synthesis of gold nanoparticles from *Dunaliella salina*, its characterization and in vitro anticancer activity on breast cancer cell line. **J. Drug Deliv. Sci. Technol**. 2019 June; 51:164-176.
20. Srivastav AK., Dhiman N., **Tiwari R.**, Arjaria N., Prakash J., Jagdale P., Ayanur A., Singh D., Patnaik S., Kumar M. **2019**. Sub-acute oral exposure of zinc oxide nanoparticles causes alteration in iron homeostasis through acute phase response: A protective effect by surface modification. *J Trace Elem Med Biol*. 2019 Mar; 52:270-287.
21. Singh A., Kamal R., **Tiwari R.**, Gaur VK., Bihari V., Satyanarayana GNV., Patel DK., Azeez PA., Srivastava V., Ansari A., Kesavachandran CN. **2018**. Association between PAHs biomarkers and kidney injury biomarkers among kitchen workers with microalbuminuria: A cross-sectional pilot study. **Clin Chim Acta**. 2018 Dec; 487:349-356.
22. **Tiwari R.**, Singh RD., Khan H., Gangopadhyay S., Mittal S., Singh V., Arjaria N., Shankar J., Roy SK., Singh D., Srivastava V. **2017**. Oral subchronic exposure to silver nanoparticles

causes renal damage through apoptotic impairment and necrotic cell death. **Nanotoxicology**. 2017 Jun; 11(5):671-686.

23. Khan H., Singh RD., **Tiwari R.**, Gangopadhyay S., Roy SK., Singh D., Srivastava V. **2017**. Mercury exposure induces cytoskeleton disruption and loss of renal function through epigenetic modulation of MMP9 expression. *Toxicology*. 2017 Jul 1; 386:28-39.
24. Mittal S., Sharma PK., **Tiwari R.**, Rayavarapu RG., Shankar J., Chauhan LKS., Pandey AK. **2017**. Impaired lysosomal activity mediated autophagic flux disruption by graphite carbon nanofibers induce apoptosis in human lung epithelial cells through oxidative stress and energetic impairment. **Part Fibre Toxicol**. 2017 Apr 28; 14(1):15.
25. Singh AK., **Tiwari R.**, Kumar V., Singh P., Riyazat Khadim SK., Tiwari A., Srivastava V., Hasan SH., Asthana RK. **2016**. Photo-induced biosynthesis of silver nanoparticles from aqueous extract of *Dunaliella salina* and their anticancer potential. *J Photochem Photobiol B*. 2017 Jan; 166:202-211.
26. Srivastava A., **Tiwari R.**, Srivastava V., Singh TB., Asthana RK. **2015**. Fresh Water Cyanobacteria *Geitlerinema* sp. CCC728 and *Arthrospira* sp. CCC729 as an Anticancer Drug Resource. **PLoS One**. 2015; 10(9):e0136838.
27. Singh RD., **Tiwari R.**, Khan H., Kumar A., Srivastava V. **2015**. Arsenic exposure causes epigenetic dysregulation of IL-8 expression leading to proneoplastic changes in kidney cells. **Toxicol Lett**. 2015 Aug 19; 237(1):1-10.

ABSTRACTS- POSTER AND ORAL PRESENTATIONS

1. **Tiwari R**, Staruschenko A. **2026**. An integrated multi-organ transcriptomic atlas reveals tissue-specific pathways underlying salt-induced hypertension. 63rd ERA Congress, Glasgow Scotland, United Kingdom. June 3–6, 2026.
2. **Tiwari R**, Panchal A, Lowe M, Dissanayake LV, Kravtsova O, Bohovyk R, Xu B, Levchenko V, Palygin O, Staruschenko A. **2026**. Runt-related transcription factor 1 regulates kidney injury in salt-sensitive hypertension. The American Physiological Society (APS) Summit 2026. Minneapolis, Minnesota, USA. April 23–26, 2026. **selected as an abstract of distinction**.
3. Xu B, Semenikhina M, **Tiwari R**, Levchenko V, Kravtsova O, Lowe M, Palygin O, Staruschenko A. **2026**. Disrupted renal clock and blood pressure rhythm in type 2 diabetic nephropathy. The American Physiological Society (APS) Summit 2026. Minneapolis, Minnesota, USA. April 23–26, 2026.
4. Lowe M, Dissanayake LV, **Tiwari R**, Bohovyk R, Levchenko V, Klemens C, Staruschenko A. **2026**. Molecular mechanisms of diabetic kidney disease after chronic high-fat diet feeding in type 2 diabetic nephropathy rats. The American Physiological Society (APS) Summit 2026. Minneapolis, Minnesota, USA. April 23–26, 2026.
5. Dissanayake LV, Zietara A, **Tiwari R**, Kravtsova O, Gumz ML, Staruschenko A. High salt blunts time-of-day transcriptomic changes, affecting metabolic adaptations in salt-sensitive hypertension. **2026**. The American Physiological Society (APS) Summit 2026. Minneapolis, Minnesota, USA. April 23–26, 2026.
6. Sharma R., **Tiwari R.**, O'Sullivan J., Kapitsinou P.P. **2025**. Lactate Monocarboxylate

Transporter (MCT1/4) Inhibitor Syrosingopine Restores Adaptive Repair in Kidney Injury. ASN Kidney Week 2025. Poster Presentation. Houston, TX, USA. November 5–9, 2025.

7. Didik S., Levchenko V., Kravtsova O., Bohovyk R., Dissanayake L.V., **Tiwari R.**, Xu B., Lowe M., Shapiro A., Upadhyay G.D., Kain V., Halade G.V., Staruschenko A. **2025**. Renal Effects of Semaglutide in Adolescent Mice. ASN Kidney Week 2025. Poster Presentation. Houston, TX, USA. November 5–9, 2025.
8. Dissanayake L.V., Tan Y., **Tiwari R.**, Levchenko V., Palygin O., Rinschen M.M., Staruschenko A. **2025**. Lysine Attenuates Salt-Sensitive Hypertension via Modifications of Fatty Acid Metabolism. ASN Kidney Week 2025. Poster Presentation. Houston, TX, USA. November 5–9, 2025.
9. **Tiwari R.**, Dissanayake L., Lowe M., Kravtsova O., Xu B., Levchenko V., Staruschenko A. **2025**. Integrated Multi-Organ Transcriptomic Atlas Reveals Novel Tissue-Specific Pathways in Salt-Induced Hypertension. Hypertension Scientific Sessions 2025. Baltimore, MD, USA. **Oral Presentation**. September 4–7, 2025.
10. **Tiwari R.**, Dissanayake L., Kravtsova O., Levchenko V., and Staruschenko A. **2025**. A time-course transcriptomic analysis of hypertension-induced kidney, heart, and liver injury in Dahl salt-sensitive rats. Poster Presentation. APS (American Physiology Summit) 2025. Baltimore, MD, USA. April 24–27, 2025.
11. Sharma R., **Tiwari R.**, Borkowski G., O'Sullivan J., Kapitsinou P.P. **2024**. Endothelial Prolyl Hydroxylase 3 (PHD3) Regulates Post-Ischemic Kidney Injury Repair and Inflammation. ASN Kidney Week 2024. Oral Presentation. San Diego, CA, USA. October 23–27, 2024.
12. O'Sullivan J., Borkowski G., Sharma R., **Tiwari R.**, Kapitsinou P.P. **2024**. Tryptophan Breakdown Product 3-Hydroxyanthranillic Acid Promotes AKI Recovery under Hypoxic Conditions. ASN Kidney Week 2024. Poster Presentation. San Diego, CA, USA. October 23–27, 2024.
13. Bishop B.Y., Sharma S.H., Yuk S.A., Almunif S., Quaggin S.E., Tiwari R., Scott E., Kapitsinou P.P. **2024**. Nano-carrier Based Approach to Target the Inflamed Kidney Endothelium. ASN Kidney Week 2024. Poster Presentation. San Diego, CA, USA. October 23–27, 2024.
14. **Tiwari R.**, Sharma R., Gabriella S.B., O'Sullivan J., Quaggin S.E., Kapitsinou P.P. **2023**. Endothelial Prolyl Hydroxylase 3 Regulates Post-ischemic Kidney Injury Through HIF Dependent Mechanisms. AHA Scientific Sessions 2023. Poster Presentation. Nov 11–13, 2023.
15. **Tiwari R.**, An S.Y., Sharma R., Gabriella S.B., O'Sullivan J., Quaggin S.E., Kapitsinou P.P. **2023**. Endothelial Cells Regulate Post-Ischemic Kidney Repair Through PHD/HIF-Dependent Hyperglycolysis. ASN Kidney Week 2023. Poster Presentation. Nov 2–5, 2023.
16. **Tiwari R.**, An S.Y., Kapitsinou P.P. **2021**. Differential Role of Endothelial Prolyl-Hydroxylase 1, 2, 3 in Acute Kidney Injury. ASN Kidney Week 2021. Oral Presentation. Fully digital meeting. Nov 4–7, 2021.
17. **Tiwari R.** Kapitsinou P.P. **2020**. Endothelial Prolyl-Hydroxylase Domain Proteins Regulate Capillary Rarefaction Following Ischemic AKI and Reprogram Endothelial Metabolism. ASN Kidney Week 2020. Poster Presentation. Fully digital meeting. Oct 22–25, 2020.
18. **Tiwari R.**, Schonfeld M.P., Kapitsinou P.P. **2019**. Inactivation of Endothelial HIF

Polyhydroxylases Following Ischemic Acute Kidney Injury Promotes Kidney Fibrosis. ASN Kidney Week 2019. Oral Presentation. Walter E. Washington Convention Center, Washington, DC, USA. Nov 5–10, 2019.

19. **Tiwari R.**, Gangopadhyay S., Singh R.D., Srivastava V. **2018**. Gestational Exposure to Silver Nanoparticles Provides Protection Against Streptozotocin Induced Injury and Associated Nephropathy. International Toxicology Conclave. Poster Presentation. CSIR-IITR, Lucknow, India. Nov 2–3, 2018.
20. Gangopadhyay S., Shukla S., Singh R.D., Khan H., **Tiwari R.**, Srivastava V. **2018**. Prenatal Exposure to Arsenic Induces Epidermal Hyperplasia Leading to Local Inflammation in Skin and an Aggravated Response in a Two-Stage Model of Cutaneous Carcinogenesis in Mice. Cell Death in Cancer and Toxicology (CDCT). Poster Presentation. CSIR-IITR, Lucknow, India. Feb 20–22, 2018.
21. Shukla S., Gangopadhyay S., Singh R.D., **Tiwari R.**, Khan H., Srivastava V. **2017**. Role of In-Utero Arsenic Exposure in the Development of Early Onset Diabetes in Mice: Potential Contribution of Metabolic Deregulation. International Toxicology Conclave. Poster Presentation. CSIR-IITR, Lucknow, India. Nov 5–6, 2017.
22. **Tiwari R.**, Singh R.D., Khan H., Gangopadhyay S., Srivastava V. **2017**. Gestational and Lactational Exposure to Silver Nanoparticles Could Induce Diabetes and Kidney Damage Through Immunological and Metabolic Alterations. International Toxicology Conclave. Poster Presentation. CSIR-IITR, Lucknow, India. Nov 5–6, 2017.
23. Gangopadhyay S., Shukla S., Singh R.D., **Tiwari R.**, Srivastava V. **2017**. Gestational Exposure to Environmentally Relevant Concentration of Arsenic Increases Skin Tumorigenesis and Squamous Cell Carcinoma. International Seminar on “Environmental Pollution: Challenges and Strategies”. Poster Presentation. CSIR-IITR, Lucknow, India. Oct 11–13, 2017.
24. **Tiwari R.**, Singh R.D., Gangopadhyay S., Khan H., Srivastava V. **2017**. Long-Term Oral Exposure to Silver Nanoparticles Induces Necrotic Cell Death by Interrupting the Process of Apoptosis in the Kidney. International Seminar on “Environmental Pollution: Challenges and Strategies”. Poster Presentation. CSIR-IITR, Lucknow, India. Oct 11–13, 2017. (3rd Best Poster Presentation Award)
25. Singh R.D., **Tiwari R.**, Khan H., Gangopadhyay S., Singh D., Srivastava V. **2016**. Folic Acid Attenuates Fetal Arsenic Exposure Induced Kidney Fibrosis. India International Science Festival (IISF) – Young Scientists’ Conclave (YSC). Poster Presentation. CSIR-NPL, Delhi, India. Dec 8–11, 2016.
26. **Tiwari R.**, Singh R.D., Khan H., Gangopadhyay S., Mittal S., Kumar M., Srivastava V. **2016**. Safety Assessment of Silver Nanoparticles Following Gestational Exposure. India International Science Festival (IISF) – Young Scientists’ Conclave (YSC). Poster Presentation. CSIR-NPL, Delhi, India. Dec 8–11, 2016.
27. **Tiwari R.**, Singh R.D., Khan H., Gangopadhyay S., Srivastava V. **2016**. Gestational Exposure of Silver Nanoparticles: Long Term Safety Assessment in an Animal Model. 2nd International Toxicology Conclave 2016 (ITC 2016). Poster Presentation. CSIR-IITR, Lucknow, India. Nov 15–16, 2016.
28. Singh A.K., Singh U., Kumar V., **Tiwari R.**, Singh P., Khadim Sk.R., Tiwari A., Hasan S.H.,

- Srivastava V., Asthana R.K. **2016**. Green Synthesis of Silver Nanoparticles from *Dunaliella salina* as an Anticancer Agent. International Conference on Microalgal and Cyanobacterial Biotechnology. Poster Presentation. Bharathidasan University, Tiruchirapalli, Tamil Nadu, India. Aug 29–31, 2016.
29. Singh R.D., **Tiwari R.**, Gangopadhyay S., Khan H., Singh D., Srivastava V. **2016**. Imprinting of TGF- β 1 Expression Following Prenatal Arsenic Exposure Leads to Chronic Renal Fibrosis. ISEE–ISES Asia Chapter 2016 (ISEE–ISES AC2016). Poster Presentation. Sapporo, Hokkaido, Japan. Jun 26–29, 2016.
30. Khan H., Singh R.D., **Tiwari R.**, Gangopadhyay S., Srivastava V. **2016**. Prenatal Methylmercury Exposure to Rat Causes Epigenetic Changes in Genes Involved in Nephrogenesis. 6th International Conference on Metals in Genetics, Chemical Biology and Therapeutics (ICMG 2016). Poster Presentation. Bangalore, India. Feb 17–20, 2016.
31. Khan H., Singh R.D., **Tiwari R.**, Srivastava V. **2015**. Exposure of Mercury Alters Rat Kidney Epithelial Cell Adhesion and Integrity by Methylation-Mediated Induction of MMP9 Expression. XXXVIII All India Cell Biology Conference and International Symposium on “Cellular Response to Drugs”. Poster Presentation. CDRI, Lucknow, UP, India. Dec 2015.
32. **Tiwari R.**, Singh R.D., Khan H., Gangopadhyay S., Srivastava V. **2015**. Exposure to Silver Nanoparticles Causes Extensive Mitochondrial and DNA Damage in Kidneys Leading to Loss of Renal Function. XXXVth Annual Conference of Society of Toxicology (India) (STOX 2015). Poster Presentation. Hotel Taj Banjara, Hyderabad, India. Nov 19–21, 2015. (**Best Poster Presentation Award**)
33. Singh R.D., **Tiwari R.**, Khan H., Gangopadhyay S., Srivastava V. **2015**. Arsenic Induces Interleukin-8 Promoter Hypomethylation and Acetylation to Promote Pro-Angiogenic Changes in Human Embryonic Kidney Cells. XXXVth Annual Conference of Society of Toxicology (India) (STOX 2015). Poster Presentation. Hotel Taj Banjara, Hyderabad, India. Nov 19–21, 2015.
34. **Tiwari R.**, Singh R.D., Khan H., Gangopadhyay S., Srivastava V. **2015**. Prolonged Exposure to Silver Nanoparticles Causes Renal Toxicity in Rats Through Extensive Mitochondrial and DNA Damage. International Toxicology Conclave. Poster Presentation. CSIR-IITR, Lucknow, India. Nov 5–6, 2015.
35. Singh R.D., **Tiwari R.**, Srivastava V. **2014**. Prenatal Arsenic Exposure Potentiates Interleukin-8 Expression Through Altered Epigenetic Modification Patterns of the Promoter Region in In-Vitro Model. 4th Asian Conference on Environmental Mutagens. Poster Presentation. IICB, Kolkata, India. Dec 10–12, 2014.
36. **Tiwari R.**, Singh R.D., Srivastava V. **2014**. Prolonged Exposure to Silver Nanoparticles Induces Nephrotoxicity in Rats Due to Mitochondrial Damage and Induction of ROS-Dependent Signaling. 4th Asian Conference on Environmental Mutagens. Poster Presentation. IICB, Kolkata, India. Dec 10–12, 2014. (**NIEHS Travel Award**)

IV. POSITIONS, SCIENTIFIC APPOINTMENTS, AND HONORS

POSITIONS AND EMPLOYMENT

2013-2017 Project Fellow, CSIR-Indian Institute of Toxicology Research (CSIR-IITR), Lucknow, India

- 2017-2018 Junior Research Fellow, CSIR-IITR, Lucknow, India
- 2018-2019 Postdoctoral Fellow, University of Kansas Medical Center, Kansas City, USA (Mentor: Dr. Pinelopi Kapitsinou)
- 2019-2024 Postdoctoral Fellow, Northwestern University, Chicago, USA (Mentor: Dr. Pinelopi Kapitsinou)
- 2024- present Research Associate (Research Faculty), University of South Florida, Tampa, USA

SCIENTIFIC APPOINTMENTS AND SERVICE

EDITORIAL ROLE

- Guest Associate Editor, Frontiers in Genetics (2022)
- Guest Associate Editor, Frontiers in Medicine (2023)

RESEARCH TOPIC EDITOR

- Genetic, Cellular, and Molecular Basis of Kidney Diseases
Frontiers in Genetics
- The Role of Immune Microenvironment in the Kidney Pathogenesis
Frontiers in Medicine

REVIEWER ROLE

- American Journal of Physiology-Renal Physiology
- Animal Microbiome
- Apoptosis
- Biological Trace Element Research
- Biology Direct
- Cell Biology and Toxicology
- Cell Communication and Signaling
- Clinical Science
- Environment International
- Environmental Pollution
- Frontiers in Molecular Biosciences
- Frontiers in Oncology
- Frontiers in Pharmacology
- Frontiers in Physiology
- Frontiers in Toxicology
- Iscience
- Journal of Hazardous Materials Advances
- Journal of Nanobiotechnology
- Kidney and Blood Pressure Research
- Nutrition & Diabetes

Naunyn-Schmiedeberg's Archives of Pharmacology
Phytochemistry Reviews
Scientific Reports
Toxicology
Toxicon

GRANT APPLICATION REVIEWER

American Heart Association (AHA) Rapid Impact Research Award Grants, 2026

SCIENTIFIC POSTER PRESENTATION JUDGE

USF Health Research Day, 2026

PROFESSIONAL MEMBERSHIPS

2019 - Present	Member of the American Society of Nephrology (ASN)
2020 - Present	Member of the American Heart Association (AHA)
2024 - Present	Member of the American Physiological Society (APS)

HONORS AND ACADEMIC AWARDS

2025. Council for Kidney in Cardiovascular Disease (KCVD) New Investigator Travel award, Hypertension Scientific Sessions 2025, September 4–7, 2025, Baltimore, Maryland.
- 2023 KAREN L. CAMPBELL, PHD, travel award for attending and serving as a co-mentor to a group of students/residents at the ASN kidney week meeting, held November 2-5, 2023, at the Pennsylvania, Philadelphia, PA.
- 2023 AHA Early Innovators Spotlight Presenter at Scientific Sessions, November 11–13, 2023, at the Pennsylvania, Philadelphia, PA.
- 2019 National post-doctoral fellowship grant award from Science & Engineering Research Board India.
Synthesis of novel biocompatible thiones/selones functionalized nanomaterial for methylmercury detoxification and validation in in-vitro and in-vivo model. Role PI. (Declined).
- 2017 3rd best poster presentation award in 'International seminar on Environmental Pollution: Challenges and Strategies, Lucknow, India.
- 2015 Best Poster Presentation Award in 'XXXVth Annual Conference of Society of Toxicology (India) (STOX-2015), Hyderabad, India.
- 2014 National Institute of Environmental Health Sciences (NIEHS) Travel Award; 4th Asian Conference on Environmental Mutagens, IICB Kolkata, India.
- 2014 CSIR UGC NET (National Eligibility Test) for lectureship; 30th all India rank in Life Sciences
- 2013 CSIR UGC NET (National Eligibility Test) for lectureship; 37th all India rank in Life Sciences

V. PENDING, CURRENT AND PRIOR FUNDING

PENDING (SUBMITTED) GRANT

1. National Institutes of Health (NIH); NIDDK

Multi-PI (R01DK150118)

12/01/2026- 11/30/2031

Tiwari (50% effort) and Staruschenko

Title: Molecular and Metabolic Control of Hypertensive Kidney Injury by RUNX1

Total cost: 3,660,250.00 USD

2. National Institutes of Health (NIH); NHLBI

Tiwari (PI) (R21HL192732)

04/01/2027- 03/31/2029

Title: Circulating and Urinary Extracellular Vesicle Atlas of CKM Syndrome

Total cost: 412,500.00 USD

3. National Institutes of Health (NIH); Director's New Innovator Award (DP2)

Tiwari (PI) (DP2OD043313)

07/01/2027- 06/30/2032

Title: Decoding multiorgan biology across the dehydration-rehydration cycle

Direct cost: 2,375,000.00 USD

CURRENT GRANT SUPPORT

1. American Heart Association Career Development Award (26CDA1610279)

American Heart Association (AHA)

Tiwari (PI)

07/2026-06/2029

Title: Role of lactate and metabolic reprogramming in kidney disease

Total cost: 231,000.00 USD

2. Rapid Impact Research Award (26RIRA1622963)

American Heart Association (AHA)

Tiwari (PI)

04/2026-03/2028

Title: Integrated metabolomics and multi-organ communication atlas of CKM syndrome

Total cost: 99,998.00 USD

PRIOR GRANT SUPPORT

1. Early-Stage Investigator Pilot Award

University of South Florida (USF)

Tiwari (PI)

06/2025-05/2026

Title: Role of sodium-coupled monocarboxylate transporter 1 in post-ischemic kidney repair

Total cost: 10,000.00 USD

2. 2025 Spatial Transcriptomics Pilot Grant

University of South Florida (USF)

Staruschenko and Tiwari (PI)

08/2025-07/2026

Title: Spatiotemporal transcriptomic atlas of hypertensive kidney injury

Total cost: 15,000.00 USD

3. American Heart Association Postdoctoral Fellowship (23POST1020467)

American Heart Association (AHA)

Tiwari (PI)

01/2023-09/2024

Title: Hypoxic signaling and endothelial metabolic reprogramming in post-ischemic kidney injury

Total cost: 151,476.00 USD

4. K-INBRE Postdoctoral Fellowship

National Institutes of Health; University of Kansas Medical Center

Tiwari (PI)

05/2019-04/2020

Title: PHD inhibition and endothelial cell metabolic reprogramming

Total cost: 25000.00 USD

VI. PATENT

MCT4-targeted therapeutics preventing AKI to CKD transition (US-2024-0245661 A1); Kapitsinou and Tiwari.

VII. RESOURCES DEVELOPED

[Star Lab – Hypertension Atlas](#)

<https://www.kidneymetflux.com/>.