Santosh Karnewar, MSc, PhD

Santosh Karnewar, MSc, PhD.
Assistant Professor,
University of Georgia College of Pharmacy (Augusta Campus).
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EDUCATION

Ph.D., Academy of Scientific & Innovative Research (AcSIR), India, 2017.
Concentrations: Cardiovascular Biology
Dissertation: Studies on the Role of AMPK-mediated pathways during atherosclerosis and preventive strategies.
Dissertation Advisor: Srigiridhar Kotamraju, Ph.D.
MSc. Biochemistry, Department of Biochemistry, Osmania University, India, 2009.
Concentrations: Biochemistry
BSc, Osmania University, India, 2007.
Concentrations: Biotechnology, Zoology and Chemistry**.**

TEACHING EXPERIENCE

Lecturer of Biochemistry Department, Prathibha PG College, Osmania University, 2010-2011.
Courses: Cell Biology and Biochemistry for masters' students.

RESEARCH EXPERIENCE

Research Scientist, Lindner's Lab at the University of Virginia. 2023-Present

- **Molecular imaging of vascular phenotype:** *Pharmacologic Inhibition of the Inflammasome Suppresses Microvascular and Macrovascular Thromboinflammation After Reperfused Myocardial Infarction* (***Karnewar et al. Manuscript In preparation for Circulation***). Briefly, we found that after reperfused MI, pharmacologic inhibition of the NLRP3 inflammasome promotes myocardial salvage irrespective of reflow status through suppression of adverse inflammation and thromboinflammation. This therapy also suppresses post-MI activation of plaque in non-culprit vessels.
- **Preclinical assessment of oral NLRP3 Inhibitor in closed chest MI mice model:** In a preclinical assessment of an oral NLRP3 inhibitor using a closed-chest myocardial infarction (MI) mouse model, I conducted experiments to investigate remote plaque activation following MI by evaluating echocardiographic parameters**.** (***Karnewar et al. Manuscript In preparation***)
- **Therapeutic and diagnostic applications of ultrasound cavitation**: Microbubble carriers loaded with genetic material, such as adeno-associated viruses (AAV), used for transduction via inertial cavitation, microbubble carriers targeted for biological markers, used for diagnosis of inflammation in certain pathologies.
- **Targeted microbubble diagnostics:** Validated GP1bα-targeted microbubbles to detect platelet-rich thrombi in small animal models, demonstrating specificity via flow cytometry.
- **Myocardial blood flow augmentation:** Leading a pioneering project utilizing ultrasound-induced microbubble cavitation to restore myocardial blood flow and salvage cardiac tissue following myocardial infarction in a closed chest MI model, assessing the heart functions by evaluating the echocardiographic parameters.

Postdoctoral Research Associate, Gary Owens's Lab at the University of Virginia. 2017-2023

- Discovered that low fat diet-induced atherosclerosis regression is IL-1β dependent by using SMC-lineage tracing *Apoe*$^{-/-}$ mice (***Karnewar et al. ATVB 2024***).

- Discovered that treatment of Apoe-/- mice with advanced atherosclerosis with the senolytic agent ABT-263 caused increased mortality and was associated with increased endo-mt but reduced ACTA2 cap thickness and collagen content (***Karnewar et al. JCI Insight 2024***).
- Discovered that sex specific effects of EC and SMC-specific IKKβ dependent NFkβ signaling promotes atherosclerosis but is also essential for SMC recruitment in the fibrous cap of lesions by SMC and EC-specific conditional KO of IKKβ transgenic mice (***Karnewar et al. Manuscript In preparation***).
- Involved in developing Novel Mouse Model of Myocardial Infarction, Plaque Rupture, and Stroke Shows Improved Survival with Myeloperoxidase Inhibition (AZM198). (**Shamsuzzaman S *et al. Circulation 2024***).
- Discovered Female Gene Networks Are Expressed in Myofibroblast-Like Smooth Muscle Cells in Vulnerable Atherosclerotic Plaques. **2nd author- ATVB 2023**
- Utilized scRNA-seq and Cy-TOF, in combination with SMC lineage tracing, to identify eight unique clusters of SMCs dependent on Klf4 within the atherosclerotic lesions of 18-week Western diet-fed Apoe$^{-/-}$ mice. **2nd author- Circulation 2020.**
- Developed 20-25 color multi-parameter flow cytometry panel (surface and intracellular) to analyze different cell types (SMC, EC, macrophages, B-cells, and T-Cells) on atherosclerotic lesion cells and in blood.

Doctoral student, Srigiridhar Kotamraju' s Lab at the Indian institute of chemical technology. 2011-2017.
For my PhD thesis, I synthesized a novel mitochondria-targeted esculetin (Mito-Esc) and tested its efficacy against cardiovascular and metabolic dysfunctions. Recently, we licensed this molecule to a multinational company for approximately $35 million. I would be happy to discuss this further and bring this technology and expertise to your institute. I believe I would be a great asset to your team.
My doctoral research focused on oxidative stress and age-related endothelial dysfunction in atherosclerosis and preventive strategies with small molecules and FDA approved drugs. ***I synthesized, patented and investigated the effect of mitochondria-targeted compounds like Mito-Esc in Apoe$^{-/-}$ mice.*** Mito-Esc, preferentially taken up by mitochondria, enhanced endothelial cell survival via AMPK and SIRT3-mediated mitochondrial biogenesis, significantly reducing plaque formation and inflammation. I also studied metformin's role in delaying endothelial senescence and atherosclerosis, finding it enhances mitochondrial function via AMPK-SIRT1-DOT-1L-H3K79triMet-SIRT3 axis, attenuating vascular aging and plaque formation in mice. Additionally, I explored monocyte-to-macrophage differentiation mechanisms and tested metformin and resveratrol in regression of atherosclerotic plaque. This research highlights targeted interventions' potential in managing endothelial dysfunction, vascular aging, and atherosclerosis. These studies helped in finding novel approaches and mechanisms during atherosclerosis and may be potential therapeutic options for human clinical trials (3 first author papers- Karnewar et al., Sci Rep 2016. BBA mol Basis of diseases, 2018 and Atherosclerosis 2022 and several co-authored papers as listed below).

PUBLICATIONS

1. **Karnewar S**, Karnewar V, Deaton R, Shankman LS, Benavente ED, Williams CM, Bradley X, Alencar GF, Bulut GB, Kirmani S, Baylis RA, Zunder ER, den Ruijter HM, Pasterkamp G, Owens GK. IL-1β inhibition partially negates the beneficial effects of diet-induced lipid lowering. https://www.ahajournals.org/doi/10.1161/ATVBAHA.124.320800 (**Arterioscler Thromb Vasc Biol. 2024**). **IF 8.7**
2. **Karnewar S**, Karnewar V, Shankman LS, Owens GK. Treatment of advanced atherosclerotic mice with ABT-263 reduced indices of plaque stability and increased mortality. **JCI Insight**. 2024 Jan 23;9(2):e173863. doi: 10.1172/jci.insight.173863. PMID: 38258907; PMCID: PMC10906456. **IF 8.0**
3. **Karnewar S**, Gamze B. Bulut, Vaishnavi K, Kirmani S, Gary K. Owens*. Dichotomous roles of Smooth muscle and endothelial specific IKKβ dependent NF-KB signaling on atherosclerosis progression. (***Manuscript in preparation***).
4. **Santosh Karnewar**, The Anh Nguyen, Weiting Huang, Emma Lindner, Eli V. Casarez, Onur Varli, Aris Xie, Jonathan R. Lindner*. Pharmacologic Inhibition of the Inflammasome Suppresses Microvascular and

Macrovascular Thromboinflammation After Reperfused Myocardial Infarction. (***Manuscript in preparation for Circulation***).

5. **Karnewar S**, Pulipaka S, Katta S, Panuganti D, Neeli PK, Thennati R, Jerald MK, Kotamraju S. Mitochondria-targeted esculetin mitigates atherosclerosis in the setting of aging via the modulation of SIRT1-mediated vascular cell senescence and mitochondrial function in *Apoe*$^{-/-}$ mice. ***Atherosclerosis***. 2022 Jul 20; 356:28-40. **IF 6.8**
6. **Karnewar S**, Neeli PK, Panuganti D, Sasikumar Kotagiri, Sreevidya Mallappa, Jain N, JM Kumar, Kotamraju S. Metformin regulates mitochondrial biogenesis and senescence through AMPK mediated H3K79 methylation: Relevance in age-associated vascular dysfunctions. ***BBA Molecular Basis of Disease***. 2018; 1864: 1115-1128. **IF 6.2**
7. **Karnewar S**, Vasamsetti SB, Gopoju R, Kanugula AK, Ganji SK, Sripadi P, Rangaraj N, Tupperwar N, JM Kumar, Kotamraju S: *Mitochondria-targeted esculetin alleviates mitochondrial dysfunction by AMPK- mediated nitric oxide and SIRT3 regulation in endothelial cells: potential implications in atherosclerosis*. ***Scientific Reports*.** 2016; 6, 24108. **IF 5.1**
8. Shamsuzzaman S, Deaton RA, Salamon A, Doviak H, Serbulea V, Milosek VM, Evans MA, **Karnewar S**, Saibaba S, Alencar GF, Shankman LS, Walsh K, Bekiranov S, Kocher O, Krieger M, Kull B, Persson M, Michaëlsson E, Bergenhem N, Heydarkhan-Hagvall S, Owens GK. Novel Mouse Model of Myocardial Infarction, Plaque Rupture, and Stroke Shows Improved Survival With Myeloperoxidase Inhibition. Circulation. 2024 Jun 17. doi: 10.1161/CIRCULATIONAHA.123.067931. Epub ahead of print. PMID: 38881440. **IF 38**
9. Aherrahrou R, Baig F, Theofilatos K, Lue D, Beele A, Örd T, Kaikkonen MU, Aherrahrou Z, Cheng Q, Ghosh SKB, **Karnewar S**, Karnewar V, Finn AV, Owens GK, Joner M, Mayr M, Civelek M. Secreted Protein Profiling of Human Aortic Smooth Muscle Cells Identifies Vascular Disease Associations. Arterioscler Thromb Vasc Biol. 2024 Apr;44(4):898-914. doi: 10.1161/ATVBAHA.123.320274. Epub 2024 Feb 8. PMID: 38328934; PMCID: PMC10978267. **IF 8.7**
10. Benavente ED, **Karnewar S**, Buono M, Mili E, Hartman RJG, Kapteijn D, Slenders L, Daniels M, Aherrahrou R, Reinberger T, Mol BM, de Borst GJ, de Kleijn DPV, Prange KHM, Depuydt MAC, de Winther MPJ, Kuiper J, Björkegren JLM, Erdmann J, Civelek M, Mokry M, Owens GK, Pasterkamp G, den Ruijter HM. Female Gene Networks Are Expressed in Myofibroblast-Like Smooth Muscle Cells in Vulnerable Atherosclerotic Plaques. **Arterioscler Thromb Vasc Biol.** 2023 Aug 17. doi: 10.1161/ATVBAHA.123.319325. Epub ahead of print. PMID: 37589136. **IF 8.7**
11. Alexandra AC Newman, Vlad Serbulea, Richard A. Baylis, Laura S. Shankman, Xenia Bradley, Alencar GF, Owsiany KM, Deaton AR, **Karnewar S**, Shamsuzzaman S, Liang Guo, Aloke Finn, Renu Virmani, Olga A. Cherepanova, Gary K. Owens*. The fibrous cap of atherosclerotic lesions arises from multiple cellular origins through PDGFRB- and bioenergetic-dependent mechanisms. ***Nat Metab*** 3, 166–181 (2021). https://doi.org/10.1038/s42255-020-00338-8. **IF 20.8**
12. Gamze B. Bulut, Gabriel F. Alencar, Katherine M. Owsiany, Anh T. Nguyen, **Santosh Karnewar**, Ryan M. Haskins, Lillian K. Waller, Olga A. Cherepanova, Rebecca A. Deaton, Laura S. Shankman, Susanna R. Keller, and Gary K. Owens. KLF4-dependent perivascular plasticity contributes to adipose tissue inflammation. ***Arterioscler Thromb Vasc Biol***. 2021 Jan; 41(1):284-301. doi: 10.1161/ATVBAHA.120.314703. Epub 2020 Oct 15. PMID: 33054397; PMCID: PMC7769966. **IF 10.5**
13. Alencar GF, Owsiany KM, **Karnewar S**, Sukhavasi K, Mocci G, Nguyen AT, Williams CM, Shamsuzzaman S, Mokry M, Henderson CA, Haskins R, Baylis RA, Finn AV, McNamara CA, Zunder ER, Venkata V, Pasterkamp G, Björkegren J, Bekiranov S, Owens GK. Stem Cell Pluripotency Genes Klf4 and Oct4 Regulate Complex SMC Phenotypic Changes Critical in Late-Stage Atherosclerotic Lesion Pathogenesis. ***Circulation***. 2020 Nov 24;142(21):2045-2059. **IF 38**
14. Neeli PK, Sahoo S, **Karnewar S**, Singuru G, Pulipaka S, Annamaneni S, Kotamraju S. DOT1L regulates MTDH-mediated angiogenesis in triple-negative breast cancer: intermediacy of NF-κB-HIF1α axis. ***FEBS J***. 2022 Aug 26. doi: 10.1111/febs.16605. **IF 5.6**
15. S Mallappa, PK Neeli, **S Karnewar**, S Kotamraju. Doxorubicin induces prostate cancer drug resistance by upregulation of ABCG4 through GSH depletion and CREB activation: Relevance of statins in chemosensitization. ***Molecular carcinogenesis***. 2019; 58:7; 1118-1133. **IF 3.8**
16. Krishnaiah Vaarla, **Santosh Karnewar**, Devayani Panuganti, Saikiran Reddy Peddi, Rajeswar Rao Vedula, Vijjulatha Manga, Srigiridhar Kotamraju. 3-(2-(5-Amino-3-aryl-1H-pyrazol-1-yl) thiazol-4-yl)-2H-chromen-2-

ones as Potential Anticancer Agents: Synthesis, Anticancer Activity Evaluation and Molecular Docking Studies. ***ChemistryySelect***.15 April 2019. **IF 2.9**

17. Gayathri T, **Karnewar S**, Kotamraju S, Singh SP. High Affinity Neutral Bodipy Fluorophores for Mitochondrial Tracking. ACS Med Chem Lett. 2018 Jun 20;9(7):618-622. doi: 10.1021/acsmedchemlett.8b00022. PMID: 30034589; PMCID: PMC6047038. **IF 4.0**
18. Katta S, **Karnewar S**, Panuganti D, Jerald MK, Sastry BKS, Kotamraju S. Mitochondria-targeted esculetin inhibits PAI-1 levels by modulating STAT3 activation and miR-19b via SIRT3: Role in acute coronary artery syndrome. ***J Cell Physiol***. 2018 Jan;233(1):214-225. doi: 10.1002/jcp.25865. Epub 2017 May 3. PMID: 28213977. **IF 4.5**
19. Vasamsetti SB, **Karnewar S**, Gopoju R, Gollavilli PN, Narra SR, Kumar JM, Kotamraju S. Resveratrol attenuates monocyte-to-macrophage differentiation and associated inflammation via modulation of intracellular GSH homeostasis: Relevance in atherosclerosis. Free Radic Biol Med. 2016 Jul;96:392-405. doi: 10.1016/j.freeradbiomed.2016.05.003. Epub 2016 May 5. PMID: 27156686. **IF 5.6**
20. S. B. Vasamsetti, **S. Karnewar**, A. K. Kanugula, A. T. Raj, J. M. Kumar, S. Kotamraju: *Metformin inhibits monocyte-to-macrophage differentiation via AMPK mediated inhibition of STAT3 activation: Potential role in atherosclerosis*. ***Diabetes*****.** 2015 Jun; 64(6):2028-41. **IF 8.6**
21. Vaarla K, Kesharwani RK, **Santosh K**, Vedula RR, Kotamraju S, Toopurani MK. Synthesis, biological activity evaluation and molecular docking studies of novel coumarin substituted thiazolyl-3-aryl-pyrazole-4-carbaldehydes. Bioorg Med Chem Lett. 2015 Dec 15;25(24):5797-803. doi: 10.1016/j.bmcl.2015.10.042. Epub 2015 Oct 23. PMID: 26542964. **IF 2.5**
22. Gollavilli PN, Kanugula AK, Koyyada R, **Karnewar S**, Neeli PK, Kotamraju S: *AMPK inhibits MTDH expression via GSK3β and SIRT1 activation: Potential role in triple-negative breast cancer cell proliferation*. ***FEBS Journal*** 08/2015; 282(20). **IF 4.2**
23. Ramesh V, **Santosh K**, Anand TD, Shanmugaiah V, Kotamraju S, Karunakaran C, Rajendran A. Novel Bioactive Wild Medicinal Mushroom-Xylaria sp. R006 (Ascomycetes) against Multidrug Resistant Human Bacterial Pathogens and Human Cancer Cell Lines. Int J Med Mushrooms. 2015;17(10):1005-17. doi: 10.1615/intjmedmushrooms.v17.i10.100. PMID: 26756192. **IF 1.5**
24. Ramesh V, **karnewar S**, pavunraj M, Karunkaran C, Rajendran A: *In-vitro antifungal and anticancer potential of Xylaria curta fruiting body fractions against human fungal pathogen and cancer cell lines*. ***CREAM*** 5 (1): 20–26 (2015). **IF 1.4**R. Naresh Kumar, G. Malla Reddy, P Nagendar, C Kurumurthy, P Shanthan, **Karnewar S**, Kotamraju S, B Narsaiah: *Synthesis of Novel Pyrido [3 0 ,2 0 :4,5] furo[3,2-d] pyrimidine Derivatives and Their Cytotoxic Activity*. ***JHC*** 09/2014; 00(5). **IF 1.2**
25. Kamal A, Vangala SR, Karnewar **S**, GB Kumar, Shaik AB, Rasala M, S.S. Chourasiya, IB Sayeed, Kotamraju S: *Synthesis of imidazo[2,1-b][1,3,4]thiadiazolechalcones as apoptosis inducing anticancer agents*. ***MedChemComm*** 08/2014; 5(11). **IF 2.5**
26. Kanugula AK, Gollavilli PN, Vasamsetti SB, **Karnewar S**, Gopoju R, Ummanni R, Kotamraju S: *Statin- induced inhibition of breast cancer proliferation and invasion involves attenuation of iron transport: Intermediacy of nitric oxide and antioxidant defence mechanisms*. ***FEBS Journal*** 06/2014; 281(16). **IF 4.2**
27. Reddy CA, Somepalli V, Golakoti T, Kanugula AK, **Karnewar S**, Rajendiran K, Vasagiri N, Sripadi P, Kuppusamy P, Kotamraju S, Kutala VK: *Mitochondrial-Targeted Curcuminoids: A Strategy to Enhance Bioavailability and Anticancer Efficacy of Curcumin*. ***PLoS ONE*** 03/2014; 9(3): e89351. **IF 3.5**
28. Kamal A, Vangala SR, **Karnewar S**, SS Chourasiya, Shaik AB, GB Kumar, Chandan K, M K Reddy, MPN Rao, Nagabhushana A, Kallaganti V S R, Addlagatta A, Kotamraju S: *Back Cover: Synthesis and Biological Evaluation of Imidazopyridine-Oxindole Conjugates as Microtubule-Targeting Agents*. ***ChemMedChem*** 12/2013; 8(12). **IF 3.2**
29. Thangamuthu M, Manickam P, Murugesan B, **Karnewar S**, Benjamin AR, Venkatesh KA, Vairamani K, Kotamraju S, Karunakaran C: *Virtual electrochemical nitric oxide analyzer using copper, zinc superoxide dismutase immobilized on carbon nanotubes in polypyrrole matrix*. ***Talanta*** 10/2012; 100C:168-174. **IF 3.5**
30. P. Sambasiva Rao, C. Kurumurthy, B. Veeraswamy, G. Santhosh K, B. Narsaiah, K. Pranay Kumar, U. S.N. Murthy, **Santosh Karnewar**, Srigiridhar Kotamraju: Synthesis, antimicrobial and cytotoxic activities of novel 4-trifluoromethyl-(1,2,3)-thiadiazolo-5-carboxylic acid hydrazide Schiff's bases. Medicinal Chemistry Research 04/2012; 22(4). **IF 1.2**
31. Khatua TN, Padiya R, **Karnewar S**, Kuncha M, Agawane SB, Kotamraju S, Banerjee SK. Garlic protects mice heart against isoproterenol-induced oxidative damage: Role of nitric oxide. Nitric Oxide 03/2012;

27(1):9-17. **IF 3.8**

PRESENTATIONS

1. **Santosh Karnewar**, The Anh Nguyen, Weiting Huang, Emma Lindner, Onur Nadi Varli, Eli Casarez, Aris Xie, Jonathan R Lindner. PHARMACOLOGIC INHIBITION OF THE INFLAMMASOME SUPPRESSES MICROVASCULAR AND MACROVASCULAR THROMBOINFLAMMATION AFTER REPERFUSED MYOCARDIAL INFARCTION. American College of Cardiology (ACC-March 29-31, 2025). Chicago.
2. Sofia Capdeville, Bethany Gholson, Aris Xie, Rue-Jen Abraham-Fan, Junmei Chen, Jose Lopez, **Santosh Karnewar**, Jonathan Lindner. Echocardiogrpahic Correlates of Platelet TGF-b1 Signaling in Aortic Stenosis. Journal of the American Society of Echocardiography
3. **Santosh Karnewar**, Vaishnavi Karnewar, Gary K. Owens. Treatment Of Apoe-/- Mice with Advanced Atherosclerosis with The Senolytic Agent Abt-263 Caused Increased Mortality and Was Associated with Increased Endo-mt But Reduced Acta2 Cap Thickness and Collagen Content. Basic Cardiovascular Sciences Scientific Sessions 2022. July 25–28, 2022. Hilton Chicago, Illinois.
4. Ernest Diez Benavente, **Santosh Karnewar**, Michal Mokry, Gary K Owens, Hester den Ruijter. Female-biased gene regulatory networks in fibrous atherosclerotic plaques point to extracellular matrix producing fibroblast-like Smooth Muscle Cells as key players. Organization for the Study of Sex Differences (OSSD), 16th Annual Meeting, Marina del Ray, CA May 2-5, 2022.
5. **Santosh Karnewar**, Richard Baylis, Xenia Bradley, Vaishnavi Karnewar, Gabriel Alencar, Gary K Owens. Originally published 29 Jun 2020 Arteriosclerosis, Thrombosis, and Vascular Biology. 2020; 40: AMP132. Regression of Advanced Atherosclerotic Lesions in Response to Long Term Chow Diet Feeding is Associated with Increased Il1b-dependent Endo-Mt.
6. Mallappa S, Neeli PK, **Karnewar S**, Kotamraju S at International Conference on Advances in Chemical Biology and Biologics (ICACB-2019) 28 Feb-02 Mar, CSIR-IICT, Hyderabad, India. Doxorubicin induces prostate cancer drug resistance by upregulation of ABCG4 through GSH Depletion and CREB activation: Relevance of statins in chemosensitization.
7. **Karnewar S**, Neeli PK, Mallappa S, and Kotamraju S; at National Conference on Advanced Cancer Therapeutics (ACT-2018) April 4-5, 2018. CSIR-IICT, Hyderabad, India. Metformin regulates mitochondrial biogenesis and senescence through AMPK mediated H3K79 Methylation: Relevance in age-associated vascular dysfunction.
8. **Karnewar S** and Kotamraju S. *Mitochondria-targeted ubiquinone inhibits peroxide-induced oxidative stress in endothelial cells: Intermediacy of nitric oxide generation. International Conference on Chemical Biology (ICCB)* February 6-8, 2014, CSIR-IICT, Hyderabad, India.
9. Gollavilli, P.N., **Karnewar S**., Kotamraju, S. Identification of a Novel Isoform of Metadherin and Its Relevance in Breast Cancer Progression. Presented at *81st Annual Meeting of the Society of Biological Chemists (India) & Symposium on Chemistry & Biology: Two Weapons Against Diseases* November 8-11, 2012, Science City, and Kolkata, India.

SCHOLASTIC PERFORMANCE

Complete List of Published Work in My Bibliography: Google Scholar Citations: (~2000, with H-index of 19).
https://scholar.google.com/citations?user=qh0mnnUAAAAJ&hl=en

GRANTS AND FELLOWSHIPS

1) Senior Research Fellowship, Indian Council of Medical Research, India (2014-2017).
2) Leducq Foundation Young Investigator Grant (internal) (2021-2022). $10,000
3) Applied for AHA-POSTDOCTORAL Fellowship, 2021, Not funded.
4) On June 12th, 2024, I submitted the NIA-K22 career transition grant and received an impact score of 42 on the first attempt, while the payline for this category is 30. I have resubmitted the grant, I got the score of 18, the payline is 30.
5) I submitted an AHA Career Development Grant for 2025 and received a score of 33.58 on the first attempt. The 2024 payline was 30.8, I am awaiting the final funding decision from AHA.

6) I submitted an AHA-Innovative project award letter of intent on December 2nd, 2024. Not funded.
7) I submitted an AHA transformational grant due on Feb 13th, 2025.
8) I submitted a R21 grant due on Feb 16th, 2025.

PATENTS

1	Surya Prakash Singh T Gayathri K Srigiridhar **K Santosh**	Novel Borondipyrromethene Fluorochromes Tailored with Phenoxymethylpyridine and Application thereof	2017	INDIA 371195 **Active**
2	Ch Raji Reddy K Srigiridhar **K Santosh** B Nagendra Babu A Nagarsenkar S Anuradha	C5, C6 substituted and/or fused oxindoles as anti-cancer agents and process for preparation thereof	2017	United States *US10343991B2* **Active**
3	Ch Raji Reddy K Srigiridhar **K Santosh** B Nagendra Babu A Nagarsenkar S Anuradha	C5, C6 substituted and/or fused oxindoles as anti-cancer agents and process for preparation thereof	2016	INDIA IN201611037409 **Active**
4	K Srigiridhar **K Santosh** V Satish Babu T Pavan Kumar B V Subba Reddy Mahesh Kumar J	An antioxidant compound having anti-atherosclerotic effects and preparation thereof	2015	United Kingdom GB2540234B **Active**
5	K Srigiridhar **K Santosh** V Satish Babu T Pavan Kumar B V Subba Reddy Mahesh Kumar J	An antioxidant compound having anti-atherosclerotic effects and preparation thereof	2018	United States US9963476B2 **Active**
6	K Srigiridhar **K Santosh** V Satish Babu T Pavan Kumar B V Subba Reddy Mahesh Kumar J	An antioxidant compound having anti-atherosclerotic effects and preparation thereof	2015	INDIA IN478DE2015 **Active**

TECHNOLOGY TRANSFER

1. Kotamraju S, Karnewar S, Vasamsetti SB, Togapur PK, BVS Reddy, JM Kumar: An Antioxidant compound having anti-atherosclerotic effect and preparation thereof. (Patent: Recently licensed with multinational company ~35 million USD).

2. SP Singh, Thumuganti G, Kotamraju S, Karnewar S. "Novel borondipyrromethene fluorochromes tailored with phenoxymethylpyridine and application thereof" (Licensed to Tokyo Chemical Industry (TCI) Cat. No. B6123, C3661, C3662).

SKILLS, TECHNIQUES, SOFTWARE, & INSTRUMENTATION

Cell culture: siRNA Transfections, Transductions, cell culture primary cells (Isolating murine SMC with lineage tracing) and HASMC, HAEC (ATCC), H9c2 cell lines and suspension cells (THP1) and 8 cancer cell lines, including MDA-MB231(Breast cancer), MCF-7 (Breast cancer), DU-145 (Prostate cancer), A549 (Lung cancer), HeLa (Cervical cancer). Seahorse extracellular flux analyzer for OCR and ECAR. Proliferation and migration assays including Boyden chamber and scratch wound assays. Cell and Molecular Biology and Immunoassays: Cloning, qRT-PCR, Western blots, ELISA, ELISpot. Murine work: AAV gene therapy, LNP gene therapy, Ultrasound, visual sonics Echo, Siemens, molecular and perfusion imaging of micro bubbles post-MI, Color Doppler, Intravital microscopy, BP measurement, Jugular cannula placement, LAD-ligation learning. i.v, i.p, s.c injections, Blood collection, Sectioning of aorta, brachio cephalic artery, GTT and ITT assays, Mice Genotyping, Histology, IHC, IF, Confocal (4 colors), Flowcytometry (20-25 colors), scRNA-seq, bulk-RNA seq, Cytek Aurora, Cytokine analysis, Cy-TOF, LC/HRMS, HTS,

Spectrophotometry, Software: FcsExpress, Image Pro, Imaje J, ZEN confocal data, GraphPad Prism, Echo data analysis vevo systems. Molecular imaging and perfusion imaging data analysis with MCE software.

PROFESSIONAL MEMBERSHIPS

American Heart Association (ID 271593675)

North American Vascular Biology (Member ID: 35601)

JOURNAL REVIEW BOARD MEMBER

Reviewed articles for Elsevier including atherosclerosis, Springer nature, Frontiers, and Nature communication biology, Scientific Reports and other journals in the field.