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Area of Expertise

My current research is focused on expanding the chemical toolbox for neural signaling and anti-inflammation/anti-oxidant pathways to help us understand the mechanism of action of the disease pathology associated with glaucomatous optic neuropathy, Alzheimer's Diseases, Ischemic stroke, and angiogenesis. Our lab integrates medicinal chemistry, chemical biology, bio-engineering, and drug delivery using nanotechnology. We employ synthetic organic and organometallic chemistry to generate a small molecule library for low throughput as well as high throughput screening (target based as well as phenotypic). The ultimate goal of my lab is to produce novel therapeutic molecules which can be progressed to human clinical trials for these diseases.

Qualifications

PhD in Organic Chemistry, CSIR - Indian Institute of Chemical Technology

Recent Publications

Novel Chitohexaose Analog Protects Young and Aged mice from CLP Induced Polymicrobial Sepsis

Das, P., Panda, S. K., Agarwal, B., Behera, S., Ali, S. M., Pulse, M. E., Solomkin, J. S., Opal, S. M., Bhandari, V. & Acharya, S., 1 Dec 2019, In : Scientific Reports. 9, 1, 2904.

Hybrid compound sa-2 is neuroprotective in animal models of retinal ganglion cell death

Stankowska, D. L., Dibas, A., Li, L., Zhang, W., Krishnamoorthy, V. R., Chavala, S. H., Nguyen, T. P., Yorio, T., Ellis, D. Z. & Acharya, S., Jul 2019, In : Investigative Ophthalmology and Visual Science. 60, 8, p. 3064-3073 10 p.

Hybrid Nitric Oxide Donor and its Carrier for the Treatment of Peripheral Arterial Diseases

Le, D. Q., Kuriakose, A. E., Nguyen, D. X., Nguyen, K. T. & Acharya, S., 1 Dec 2017, In : Scientific Reports. 7, 1, 8692.

Design and synthesis of novel hybrid sydnonimine and prodrug useful for glaucomatous optic neuropathy

Acharya, S., Rogers, P., Krishnamoorthy, R. R., Stankowska, D. L., Dias, H. V. R. & Yorio, T., 1 Mar 2016, In : Bioorganic and Medicinal Chemistry Letters. 26, 5, p. 1490-1494 5 p.

Novel benzodifuran analogs as potent 5-HT_{2A} receptor agonists with ocular hypotensive activity

Feng, Z., Acharya, S., Klimko, P. G., Hellberg, M. R., May, J. A., Kelly, C., Williams, G., McLaughlin, M. A. & Sharif, N. A., 1 Jun 2007, In : Bioorganic and Medicinal Chemistry Letters. 17, 11, p. 2998-3002 5 p.

Asymmetric synthesis of the stereoisomers of 11,12,15(S)-trihydroxyeicosa- 5(Z),8(Z),13(E)-trienoic acid, a potent endothelium-derived vasodilator

Falck, J. R., Barma, D., Mohapatra, S., Bandyopadhyay, A., Reddy, K. M., Qi, J. & Campbell, W., 4 Oct 2004, In : Bioorganic and Medicinal Chemistry Letters. 14, 19, p. 4987-4990 4 p.

Chiral α,β -Dialkoxy- and α -Alkoxy- β -aminostannanes: Preparation and Copper-Mediated Cross-Coupling

Mohapatra, S., Bandyopadhyay, A., Barma, D. K., Capdevila, J. H. & Falck, J. R., 11 Dec 2003, In : Organic Letters. 5, 25, p. 4759-4762 4 p.

Homocoupling of alkyl-, alkenyl-, and arylboronic acids

Falck, J. R., Mohapatra, S., Bondlela, M. & Venkataraman, S. K., 4 Nov 2002, In : Tetrahedron Letters. 43, 45, p. 8149-8151 3 p.

Identification of a Mammalian Long Chain Fatty Acyl Elongase Regulated by Sterol Regulatory Element-binding Proteins
Moon, Y. A., Shah, N. A., Mohapatra, S., Warrington, J. A. & Horton, J. D., 30 Nov 2001, In : Journal of Biological Chemistry. 276, 48, p. 45358-45366 9 p.

Efficient total synthesis of 5-oxo-6(E),8(Z),11(Z),14(Z)-eicosatetraenoic acid (5-oxo-ETE), a potent proinflammatory autacoid

Mohapatra, S., Capdevila, J. H., Murphy, R. C., Hevko, J. M. & Falck, J. R., 18 Jun 2001, In : Tetrahedron Letters. 42, 25, p. 4109-4110 2 p.

Sponsored Projects

Bi-functional Molecule for Glaucomatous Optic Neuropathy

Acharya, S. & Stankowska, D.

BrightFocus Foundation

1/07/18 → 30/06/20

Evaluation of small molecules in ocular neovascularization (For: Daniel Larson)

Acharya, S.

Intramural Research(UNTHSC)

5/06/17 → 31/05/18