

CV (August-2018)

Laksiri Weerasinghe, Ph.D.

Email: laksiriw@slintec.lk, **Phone:** 0775401882, **Mail:** 4/1A Barnes Ave, Mount Lavinia

CURRENT POSITIONS

Senior Research Scientist

Sri Lanka Institute of Nanotechnology (SLINTEC)
Nanotechnology and Science Park
Mahenwatta, Pitipana, Homagama, Sri Lanka
Phone: 0114650553

Senior Lecturer II

Slintec Academy
Nanotechnology and Science Park
Mahenwatta, Pitipana, Homagama, Sri Lanka
Phone: 0114650553

EDUCATION & POSTGRADUATE TRAINING

- **Washington State University, United States** 2015
Postdoctoral Research Associate
- **University of Montreal, Canada** 2014
Postdoctoral Fellow
- **Washington State University, United States** 2013
Ph.D., *Organic Chemistry*
- **University of Colombo, Sri Lanka** 2004
B.Sc (Hons), (*Special Degree in Chemistry*)

EMPLOYMENT HISTORY

- **Senior Lecturer, Slintec Academy** 2017-Present
- Visiting Lecturer, University of Kelaniya 2017-Present
- **Senior Research Scientist, SLINTEC** 2015-Present
- Postdoctoral Research Associate, Washington State University 2014-2015
- Postdoctoral Fellow, University of "Montreal, Canada 2013
- Graduate Teaching Assistant, Washington State University 2011-2013
- Graduate Research Assistant, Washington State University 2009-2011
- Graduate Teaching Assistant New Mexico State University 2006-2009
- Temporary Demonstrator, Open University Sri Lanka 2004-2005
- Temporary Demonstrator, University of Colombo 2004 (Mar-Sep)

INVITED TALKS & ORAL PRESENTATIONS

- Popular talk in Organic chemistry, Institute of chemistry (Feb 2018)
- Seminar in natural products chemistry, Institute of Chemistry (Jan 2018)

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- Plenary speaker, International conference of drug discovery (September 2017)
- 246th ACS National Meeting, Indianapolis, USA (September 2013)
- 43rd National Organic Symposium, Seattle, USA (June 2013)
- 243rd ACS National Meeting, San Diego, USA (March 2012)

PROFESSIONAL ACTIVITIES

- Member of the organizing committee of Global Experts Meeting on Frontiers in Nanomedicine and Drug Delivery (*Nanodelivery 2019*)
- Session chair for International Conference on drug discovery and development, Colombo, 2017
- Session chair for 3rd International Conference on Nanoscience and Nanotechnology, Colombo, 2016
- Member of SLAAS (*2015-present*)
- Member of American Peptide Society (APS) (*present*)
- Member of American Chemical Society (ACS) (*2006 – present*)

CURRENT RESEARCH INTERESTS

Natural product synthesis, New synthetic methodologies, Structure based drug design and synthesis, Antimicrobial peptides, Controlled and targeted drug delivery using nano-carriers and Chemical modifications of graphene oxide for catalytic applications.

RESEARCH EXPERIENCE

Postdoctoral Research

(With Prof. Ming Xian at Washington State University)

- Investigated the chemistry and chemical biology of persulfides
- Synthesized sugar based hydrogen sulfide donors
- Developed new synthetic applications of S-nitrosothiols

(With Prof. Stephen Hanessian at University of Montreal)

- Designed and synthesized novel bicyclic nucleotide analogs

Doctoral Research

(With Prof. Philip Garner at Washington State University)

- Completed a short, efficient total synthesis of neuro-protective natural product *kaitocephalin* in 15 steps
- In collaboration with Vertex Pharmaceuticals, Completed a short, efficient total synthesis of *anti-viral* drug A-315675 in 17 steps
- Application of azomethine ylide based [C+NC+CC] asymmetric coupling reaction to make highly substituted pyrrolidine analogs in gram scale
- Application of [C+NC+CC] asymmetric coupling reaction to synthesis *anti-cancer* natural product cyanocycline in 27 steps

Undergraduate Research

(With Prof. S. A. Deraniyagala at University of Colombo, Sri Lanka)

- Investigated the insect repellent activity of volatile components present in selected tropical plant species in Sri Lanka

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COLLABORATORS

- Dr. Inoka Perera, Department of Zoology and Environmental chemistry, University of Colombo
- Dr. Ranga Jayakody, Department of chemistry, University of Sri Jayewardenepura

PUBLICATIONS

(Independent research contributions)

- [13]. N. P. Katuwavila; Y. Amarasekara; V. Jayaweera; I. C. Perera; **L. Weerasinghe*** ‘ Functionalized Graphene oxide for significantly enhanced antimicrobial activity of Cephalexin’. (*manuscript in preparation*)
- [12]. R. T. De Silva, R. K. Dissanayake, M. M. M. G. P. G. Mantilaka a, W.P.S.L. Wijesinghe, S. S. Kaleel a, T. N. Premachandra, **L. Weerasinghe**, K. M. de Silva , G. A. J. Amaratunga “Drug-loaded halloysite nanotubes reinforced electrospun alginate-based nanofibrous scaffolds with sustained antimicrobial protection” ***ACS Applied Materials & Interfaces***, (2018) (*accepted*)
- [11]. Amarsekara, B. M. Y. D.; Perera I. C. **Weerasinghe, L.**, “*In Silico* dissection of the mechanism of anticancer activity of Tachyplesin” ***International Conference on Drug Discovery and Development***, Colombo, 2017
- [10]. Rajapaksha, R. M. P. C. D.; Wikramasinghe, N. D.; Jayaweera, V.; Katuwavila, N. P.; Perera, I. C.; **Weerasinghe, L.**; “Controlled release of antimicrobial Cephalexin drug from Graphene Oxide – Fe₃O₄ nanocomposite” ***3rd International Conference on Nanoscience and Nanotechnology***, Colombo, 2016
- [9]. Rajapaksha, R. M. P. C. D.; Abeykoon, I.; Nisansala, I G. G. T; Jayaweera, V.; Katuwavila, N. P.; Gunasekara, T.D.C.P.; Perera, I. C.; **Weerasinghe, L.** “Synthesis of a novel Graphene oxide - Iron oxide nano-composite and comparison of its antimicrobial activity against selected medically important bacteria” ***3rd ASEAN Association Schools of Medical Technology (AASMT) conference***, Bangkok, Thailand, 2016
- [8]. Jayaweera, V.; Eliyapura, A.; Gunasekara, D.; **Weerasinghe, L.**; Gunathilaka, P.A.D.H.N.; Abeyewickreme, W.; Karunaratne, V. “Encapsulation of essential oil blend in β-CD nanoparticles as a repellent for slow release” ***Proceedings of the Current Research Activities on dengue***, Colombo 2015.

(Postdoctoral research)

- [7]. Park, C-M.; **Weerasinghe, L.**; Day, J. J.; Fukuto, J. M.; Xian, M.* “Persulfides: Current Knowledge in Chemistry and Chemical Biology” ***Mol. BioSyst.*** (2015), 11, 1775
- [6]. Biggs, T., **Weerasinghe, L.**; Park, C-M.; Xian, M.* “Phosphine Mediated Conjugation of S-Nitrosothiols and Aldehydes” ***Tetrahedron Lett.*** (2015), 56, 2741.

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(Doctoral research)

- [5]. Garner, P.*; **Weerasinghe, L.**; Van-Houten, I.; Hu, J. "A concise [C+NC+CC] Coupling-Enabled Synthesis of kaitocephalin" **Chem. Commun.** (2014) 50, 4908.
- [4]. Garner, P.*; **Weerasinghe, L.**; Youngs, W. J.; Wright, B.; Wilson, D.; Jacobs, D. "[C+NC+CC] Coupling-Enabled Synthesis of Influenza Neuraminidase Inhibitor A-315675" **Org. Lett.** (2012) 14, 1326.
- [3]. Ahmed, A. A.; Hamada, M.; Shinada, T.; Ohfuné, Y.; **Weerasinghe, L.**; Garner, P.; Oswald, R. E.* "The Structure of (-)-Kaitocephalin Bound to the Ligand Binding Domain of the AMPA/Glutamate Receptor, GluA2" **J. Biol. Chem.** (2012) 287, 41007.
- [2]. Garner, P.*; Kaniskan, H. U.; Keyari, C. M.; **Weerasinghe, L.** "Asymmetric [C + NC + CC] Coupling Entry to the Naphthyridinomycin Natural Product Family: Formal Total Synthesis of Cyanocycline A and Bioxalomycin β 2" **J. Org. Chem.** (2011) 76, 5283.
- [1]. Liyanage, W; **Weerasinghe, L.**; Strong, R. K.; Del Valle, J. R.* "Synthesis of Carbapoychelins via Diastereoselective Azidation of 5-(Ethoxycarbonyl) methyl proline Derivatives" **J. Org. Chem.** (2008) 73, 7420.

TEACHING EXPERIENCE

University of Kelaniya

Advanced Organic Chemistry II 6/2018-8/2018
Carbohydrate chemistry
Supramolecular chemistry

Slintec Academy

Synthetic Organic Chemistry 9/2017-3/2018
Nanomedicine 9/2017-3/2018

University of Kelaniya

Advanced Organic Chemistry II 03/2017-07/2017
Carbohydrate chemistry
Supramolecular chemistry

Student Mentoring

(Postgraduates)

1. Yasuri Amarasekara, (Slintec Academy)
MPhil, Supervisor (*continuing*)
2. Gayathri Pamoda, (Slintec Academy)
MPhil, Supervisor (*continuing*)
3. Chamil Rajaphaksha, (Slintec & University of Peradeniya)
MSc, Supervisor, (12/2016)

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(Undergraduates)

4. Shihan Kaleel, (University of Colombo)
Internship at SLINTEC, Supervisor, 2017
5. Aruni Dissanayake (University of Sri Jayewardenepura)
Undergraduate project, Co-supervisor, 2017

ACADEMIC AWARDS

- ACS (Division of Organic Chemistry) Travel Award- 2013 (*Nationally competitive award-USA*)
- Travel and Registration grants, Graduate & Professional Student Association, WSU