Chamara Janaka Bandara

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Gender : Male
Nationality : Sri Lankan

PERSONAL PROFILE

The strong technical, interpersonal, communication and organizational skills that I acquired during the 4 years of interdisciplinary research performed during my Ph.D. study in Natural Product Chemistry combined with the 3 years of foundation in Chemistry, Botany and Biology, obtained during undergraduate study for a B.S. (Hons) from the University of Peradeniya, Peradeniya, Sri Lanka, has trained me to become an expert research scientist in the field of Natural Product Chemistry.

1. ACADEMIC QUALIFICATIONS

Ph.D. in Natural Product Chemistry

2010/2015

Postgraduate Institute of Science (PGIS), University of Peradeniya, Peradeniya, Sri Lanka.

Institute - Postgraduate Institute of Science (PGIS)
Board of study - Chemical Sciences
Degree - Ph.D. in Natural Product Chemistry

Thesis title - Chemistry and Bioactivity of Endemic Plant Genus *Schumacheria* and Vincristine and Vinblastine from an Endophytic Fungus of *Catharanthus roseus*

Medium - English

Coursework - Postgraduate Certificate Course in Advanced Organic Chemistry

Medium - English

Course content
1. Advanced Spectroscopy and Separation Techniques 2. Biosynthesis and Biomolecules 3. Structure reactivity and Stereochemistry 4. Organic Synthesis 5. Seminar Presentation (Structure based drug designing)

B.S. General Degree (Hons) 2007/2010

University of Peradeniya, Peradeniya, Sri Lanka.

University - University of Peradeniya, Sri Lanka.
Graduate - Bachelor of Science
Class - 2nd Upper Division
Medium - English

Main Subjects	Optional Subjects
1. Chemistry 2. Botany 3. Biology	1. Environmental Chemistry 2. Medical imaging 3. Nanotechnology

2. RESEARCH EXPERIENCES

- Investigation of anticancer potential of the extracts and the isolated compounds of the endophytic fungi from selected mangrove and the other selected terrestrial plants and determination of mechanism of action in selected cancer cell lines (HEPG2, NCI 292, MCF7 and MDAMB231) by the isolated anticancer active compounds.
- Investigation of Chemistry and Bioactivity of endemic Genus *Schumacheria*
- Isolation and Characterization of Catharanthine, Vinblastine and Vincristine Producing Endophytic Fungi From *Catharanthus roseus*
- Isolation of tea-endophytic fungi and evaluation for the production of quercetin
- Isolation and bioactivity evaluation for secondary metabolites of *Austroeupatorium inulifolium* plant
- Synthesis & Characterization of Liquid Crystal Behaviour of 3-O-2-ethylhexanoyl-D-glucopyranoside

3. WORK EXPERIENCE

- Postdoctoral Research Fellow (02/10/2017 to present) at Sri Lanka Institute of Nanotechnology (Pvt) Ltd., Nanotechnology and Science Park, Pitipana, Homagama, Sri Lanka.
- Postdoctoral Research Fellow (03/01/2017 to 20/09/2017) at Institute of Biochemistry, Molecular Biology and Biotechnology (IBMBB), University of Colombo, Colombo 7, Sri Lanka; under the supervision of Prof. Kamani H. Tennekoon, Dr. Sameera R. Samarakoon and Prof. E. Dilip de Silva; Project Title: “Development of anti-cancer compound libraries”.
- Temporary Lecturer (19/10/2015 to 19/10/2016) at Department of Science & Technology, Faculty of Science & Technology, Uva Wellassa University of Sri Lanka, Passara Road, Badulla, Sri Lanka.
- Temporary Visiting Lecturer (5/25/2015 to 02/07/2016) at Department of Pharmacy, Faculty of Allied Health Sciences, University of Peradeniya, Peradeniya, Sri Lanka.
- Temporary Research Assistant/ PhD candidate (10/1/2010 to 12/1/2014) at Department of Chemistry, Faculty of science, University of Peradeniya and Tissue culture laboratory, Royal Botanical Gardens, Peradeniya, under the supervision of Prof. A. Wickramasinghe, Prof. B.M.R. Bandara, Prof. (Mrs.) D. N. Karunaratne and Prof. N.L.V.V. Karunaratne, Project Title: “ Chemistry and Bioactivity of the genus *Schumacheria*; Plants endemic to Sri Lanka” and “ Isolation and characterization of *Catharanthine*, vinblastine and vincristine producing endophytic fungi from *Catharanthus roseus*”.

- Temporary Research Assistant (5/1/2010 to 10/1/2010), at Department of Chemistry, Faculty of science, University of Peradeniya under the supervision of Prof. (Mrs.) A.D.L.C. Perera and Prof. (Mrs.) D. N. Karunaratne Project Title: "Synthesis & Characterization of Liquid Crystal Behavior of 3-O-2-ethylhexanoyl-D-glucopyranoside".

4. SCIENTIFIC TECHNIQUES & SKILLS

- Experience in cloning techniques in yeast, mitochondrial inner membrane directed gene expressions, molecular engineering and designing techniques
- Experience in handling **Geneious (R11)** software package for bioinformatics and molecular biology
- Plant Transcriptomic data assembling using **Trinity** software package at **Galaxy server** and gene mining and clustering with different bioinformatics tools using **Galaxy server**
- Cancer cell culturing and assays for anticancer compounds
- Molecular biology techniques, DNA and RNA extractions, Gel electrophoresis, PCR, RT-PCR and qPCR
- Plant protein extractions and Protein separation in SDS gel electrophoresis
- Experience in handling instruments such as **LC-MS, HPLC, GC-MS**, **Varian NMR**, UV-Visible spectroscopy, FT-IR spectroscopy, **XRF**
- Chromatographic techniques such as MPLC, Flash Chromatography, Column Chromatography, PT-TLC and size exclusion chromatography
- Microplate-Based Assays and screening techniques (Antioxidant, cytotoxic and antimicrobial assays)
- Isolation and quantification of secondary metabolites from plants and fungi using LC-MS, and evaluation of them for bioactivities.
- Structure elucidation of triterpenoids, steroids, flavonoids, terpenoid-saponins and terpenoid indole alkaloids using **^{1}H-NMR, ^{13}C-NMR, HSQC, HMBC, t-ROESY, MASS, UV** and **FT-IR**
- Scientific report/documentation writing
- Experience in handling computational software package, **ChemBioOffice**
- **Vega ZZ 3.11**, **Chimera 1.11.2**, **Pymol 1.7.4**, **VMD 1.9.3**, **NAMD 2.1.4** and **PyRx Virtual Screening Tool 0.8** with **Autodock** wizard and **Vina** wizard for molecular-docking, visualization and simulations.
- Experience in handling **Bioedit 7.2.5** and **ClustalX 2.1** software, biological sequence alignment editor and analysis program for Windows
- Experience in handling **COMPOMICS** software packages for the **MS-MS data analysis in proteomics**
- Basic knowledge in **Building Machine Learning Systems** using **Python 3.0**
- Basic knowledge in Digital Electronics & Programming; **Python 3.0, C++, C and Visual Basic**

5. UNDERGRADUATE STUDENTS TRAINED

- Supervised two students for their final year research projects, "Development of bio-insecticides using Sri Lankan herbs" and "Development and characterization of an instant herbal drink from Sri Lankan medicinal plants".

- Supervised two final year undergraduate students from the University of Peradeniya for final year research projects "A preliminary study on antimicrobial activity of *Schumacheria angustifolia* and *S. castaneifolia*" and "A preliminary study on antimicrobial activity of *S. castaneifolia* and *S. alnifolia*"

- Undergraduate students from the University of Peradeniya was trained and supervised on "Isolation and characterization of bioactive compounds from *Austroeupatorium inulifolium"*

- Supervised a final year undergraduate student from the University of Peradeniya for final year research project "Isolation and characterization of bioactive compounds from *Austroeupatorium inulifolium"*

- Supervised a final year undergraduate student and M.Sc. student from University of Peradeniya for the research project " Chemistry and bioactivity of *Acrotrema uniflorum*"

- Supervised a final year undergraduate student from the University of Peradeniya for final year research project "Bioactivity of *Ageratina riparia,* an invasive plant"

6. AS A RESOURCE PERSON

- I'm contributing as a collaborator for the National Science Foundation (NSF Sri Lanka) research grant (Grant Number: RG/2016/BS/03) under the title of "Synthesis and characterization of structure property correlation of biomass (lignin) based polyurethane foams as a replacement for petrochemical based foams"

- I have participated in the curriculum revision of the Uva Wellasssa University of Sri Lanka and prepared the course contents of Organic Synthesis and Spectroscopy in Bioprocess Technology, Nanotechnology in biomaterials, Natural Products Biosynthesis and Separation Techniques.

- Contributed as a resource person for the workshop on "Extraction, screening and bioassays for the analysis of microbial and plant products" conducted by the Sri Lankan Society for Microbiology in collaboration with the University of Peradeniya and Institute of Fundamental Studies, Sri Lanka in 2013.

- Contributed as a resource person for the Analytical Chemistry M.Sc. practical conducted by the Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka.

7. WORKSHOPS AND PROGRAMS ATTENDED

- Participated in "Short Course on Graphite Products and Graphine" conducted by the board of study in Chemical Sciences of the Postgraduate Institute of Science, University of Peradeniya, Sri Lanka, 2015.

- Participated in "First National Nanotechnology conference In Nanoscience and Nanotechnology in Sri Lanka: from Science to Commercialization", organised by the National Science Foundation, Sri Lanka, 2012.

- Participated in the workshop on "Scientific Writing" conducted by the Postgraduate Institute of Science, University of Peradeniya, Sri Lanka, 2012.

- Participated in "International Symposium on Natural Products and their Applications in Health and Agriculture" organized by Institute of Fundamental Studies and AFASSA in Institute of Fundamental Studies, Kandy, Sri Lanaka, 2011.

- Participated in the workshop on "Electrochemistry" conducted by the board of study in Chemical Sciences and Physics of the Postgraduate Institute of Science, University of Peradeniya, Sri Lanka, 2011.

8. RESEARCH COMMUNICATIONS/ PUBLICATIONS

Journal Publications:

I. Sameera R. Samarakoon, Meran K. Ediriweera, Chukwumaobim Danie, Uzochukwuwulu Nwokwu, **Chamara Janaka Bandara**, Kamani H. Tennekoon, Poorna Piyathilaka, D. Nedra Karunaratne and Veranja Karunaratne, 2017. A Study on Cytotoxic and Apoptotic Potential of a Triterpenoid Saponin (3-O-α-L-Arabinosyl Oleanolic Acid) Isolated from *Schumacheria castaneifolia* Vahl in Human Non-Small-Cell Lung Cancer (NCI-H292) Cells. BioMed Research International, 2017, 1–8. https://doi.org/10.1155/2017/9854083.

II. Indika Chandrasiri, Shashini Diwakara, **Chamara Janaka Bandara**, Siril Wijesundara, Sumedha Madawala and Veranja Karunaratne, 2015. Phytotoxicity, cytotoxicity and antioxidant activity of the invasive shrub *Austroeupatorium inulifolium* (Kunth) R.M. King & H. Rob. *Ceylon Journal of Science* (*Bio. Sci.*), 44(1), PP. 91-99.

III. **Bandara, C.J.**, Karunaratne, D.N., Wickramasinghe, A., Wijesundara, D.S.A., Bandara, B.M.R., Karunaratne, V., 2015. Total polyphenol content and antioxidant and cytotoxic activities of the Sri Lankan endemic plant genus *Schumacheria*. *International Journal of Pharmacy and Pharmaceutical Sciences*, 7(3), pp.465–467.
Available at: http://innovareacademics.in/journals/index.php/ijpps/article/view/4308.

IV. Pamunuwa, K.M.G.K., **Bandara, C.J.**, Karunaratne V. and Karunaratne, D.N., 2015. Optimization of a liposomal delivery system for the highly antioxidant methanol extract of stem-bark of *Schumacheria castaneifolia* Vahl, *Journal of Chemical and Pharmaceutical Research*, 7(4), pp. 1236-1245.

V. **Bandara, C.J.**, Karunaratne, D.N., Wickramasinghe, A., Wijesundara, D.S.A., Bandara, B.M.R., Karunaratne, V., Chemistry and bioactivity of compounds of genus *Schumacheria* and its close chemotaxonomic relationship to the genus *Dillenia*, *Journal of Chemical and Pharmaceutical Research.* 7(10), pp. 586-592.

VI. **Bandara, C.J.**, Siriwardhana, D.A.S, Karunaratne, D.N., Andersen, R., Williams, D.E., Karunaratne, V., Vincristine and Vinblastine from an Endophytic Fungus of *Catharanthus roseus* (Submitted, BMC Microbiology, MCRO-D-17-00416).

Conference presentations:

I. Balasingam S., Peries C.M., Henagamage A.P., & Bandara C.J. (2017). Bioactivity Evaluation of an Aqueous Extract of *Phyllanthus amarus* as a Potential Instant Herbal Tea. *Proceeding of the International Research Sympocium, Uva Wellassa University,19-20* (January), 29.

II. Bandara C. J., Bandara B. M. R., Wickramasinghe A., Wijesundara D. S. A., Karunaratne V., & Karunaratne D. N. (2014). Genus *Schumacheria*: Bioactivity and Chemistry. *Proceedings of the Peradeniya University International Research Sessions*, *18*(July), 464.

III. Jabar S., Bandara C. J., Bandara B. M. R., Wickramasinghe A., Karunaratne V., Rajapakse S., & Wijesundara D. S. A. (2014). Antimicrobial activity of *Schumacheria angustifolia* and *Schumacheria castaneifolia*. *Proceedings of the Peradeniya University International Research Sessions*, *18*(July), 481.

IV. Kasthuriarachchi V. D. W., Sooriyapathirana S. D. S. S., Wickramasinghe A., Bandara C. J., Bandara B. M. R., Karunaratne V., Wijesundara D. S. A., & Rajapakse R. G. S. C. (2014).

Morpholgical characterization and DNA fingerprinting reveal three distinct species in genus *Schumacheria* Sp. *Proceedings of the Peradeniya University International Research Sessions*, *18*(July), 581.

V. Pamunuwa K. M. G. K., Bandara C. J., Karunaratne D. N., & Karunaratne V. (2013). Plant extract-Encapsulated liposomes: Stability variation with the lipid content in liposomes. *Proceedings of the Peradeniya University Research Sessions*, *17*(July), 181.

VI. Bandara C. J., Alahakoon A. M. C. S. B., Bandara B. M. R., Wickramasinghe A., Karunaratne V., Rajapakse R. G. S. C., & Wijesundara D. S. A. (2013). Total polyphenol content and antimicrobial activity of *Schumacheria castaneifolia* and *Schumacheria alnifolia*. *Proceedings of the Peradeniya University Research Sessions*, *17*(July), 177.

VII. Pamunuwa K. M. G. K., Bandara C. J., Karunaratne D. N., & Karunaratne V. (2012). Effect of variation of lipid composition on properties of a liposomal delivery system. Nanoscience and Nanotechnology in Sri Lanka: from Science to Commercialization, *First National Nanotechnology conference* (p. 92).

VIII. Bandara C. J., Bandara B. M. R., Wickramasinghe A., Karunaratne V., Karunaratne N., & Wijesundara D. S. A. (2011). Chemistry and bioactivity of *Schumacheria castaneifolia*, a plant endemic to Sri Lanka. *IFS – AFASSA International Symposium on Natural Products and Their Applications in Health and Agriculture*, *71*(October), 71.

IX. Bandara C. J., Bandara B. M. R., Abeykoon D. M. B., Wickramasinghe A., Wijesundara D. S. A., Karunaratne V., & Karunaratne N. (2011). Antioxidant, Cytotoxic and Phytotoxic Activities of *Schumacheria castaneifolia*, a Plant Endemic to Sri Lanka. *Proceedings of the Peradeniya University Research Sessions*, *16*(November), 156.

9. PROFESSIONAL QUALIFICATIONS

- Successfully completed the "**Diploma in Computer Programming**" conducted by the Technical Engineering College in Kandy, Sri Lanka.

10. EXTRACURRICULAR ACTIVITIES

- Former member of Young Research Forum, Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka.
- Member of Science Alumni Association, Faculty of Science, University of Peradeniya.
- Former member of Kandy Kidney Protection Society, Kandy, Sri Lanka (Helping to supply material as well as money needs for patients who want to undergo kidney transplant and various other treatments regarding kidney disease)