

# SHANMUGAM ANANDAKUMAR., M.Sc., M.Phil., Ph.D.,

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**Technical Director,**  
Yukai Care Solutions LLP,  
Chennai, India  
Mobile: (+91)9600553587

E-mail: [bioinfoanand@gmail.com](mailto:bioinfoanand@gmail.com),

Profile Link: <http://yukaicareolutions.com/Anand.html>

Research Gate ID: <https://scholar.google.com/citations?user=pg0dkPYAAAAJ&hl=en>

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## PERSONAL STATEMENT

A dedicated, detailed and capable researcher with more than ten years of experience in life science from my graduate-level. Extensively published in journals, with related expertise in Bioinformatics - Comparative and Functional Genomics - Big Data Analysis, Computational Chemistry - Computer Aided Drug Designing. To work with reason, precision, speed, attitude and self-belief in an organization, where my potentials are exploited well towards the growth of the organization and my career as well.

## EDUCATION INFORMATION

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**2009 – 2014** (October 2009 - August 2014)

**Ph.D in Bioinformatics**, Department of Bioinformatics, School of Life Sciences, Bharathiar University, Coimbatore, India.

*Dissertation:* *Insilico* analysis of mitochondrial genome – its evolution and linkage to human diseases.

Thesis: Highly Commended

**2007 –2008**(October 2007 - September 2008)

**M.Phil in Bioinformatics**, Department of Bioinformatics, School of Life Sciences, Bharathiar University, Coimbatore, India.

*Dissertation:* Comparative modeling of Indian medicinal plants protein dataset (IMPPDS).

Thesis: Highly Commended

**2005-2007**(July 2005 - June 2007)

**M.Sc in Bioinformatics**, Department of Bioinformatics, School of Life Sciences, Bharathiar University, Coimbatore, India.

Grade/Class: I

**2002 –2005**(July 2002 - June 2005)

**B.Sc in Biotechnology**, Department of Biotechnology, Periyar University, Salem, India.

Grade/Class: I

**2000 –2002**(July 2000 - May 2002)

**HSC**, Govt. High Sec. School, Valyapatty, Namakkal, India.

Grade/Class: I & Class First Rank

**1999 –2000**(June 1999 - May 2000)

**SSLC**, Govt. High School, N.Pudupatty, Namakkal, India.

Grade/Class: I & School Third Rank

## WORK & RESEARCH EXPERIENCE INFORMATION

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**2020** (*Feb 2020 – Current*)

**Technical Director**, Yukai Care Solutions Private Limited, Chennai, India

**2015** (*Feb 2015 – Jan 2020*)

**UGC-Post Doctoral Fellow**, Department of Biotechnology, Bhupat and Jyoti Metha School of Biosciences, Indian Institute of Technology Madras, Tamil Nadu, India

**2011 – 2014** (*October 2011 - July 2014*)

**Senior Research Fellow**, (UGC under Rajiv Gandhi National Fellowship Scheme), Department of Bioinformatics, School of Life Sciences, Bharathiar University, Coimbatore, India.

**2009 – 2011** (*October 2009 - September 2011*)

**Junior Research Fellow**, (UGC under Rajiv Gandhi National Fellowship Scheme), Department of Bioinformatics, School of Life Sciences, Bharathiar University, Coimbatore, India.

**2008 – 2009** (*October 2008 - September 2009*)

**Research Associate** in DBT Bioinformatics Centre, Department of Bioinformatics, School of Life Sciences, Bharathiar University, Coimbatore, India.

## AWARDS/HONORS

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- 2015 - UGC Postdoctoral Fellowship (Recommended first rank in the subject of Computer science and Bioinformatics)
- 2012 Travel Grant award from DST, New Delhi
- 2011-2014 SRF (UGC under Rajiv Gandhi National Fellowship Scheme)
- 2009-2011 JRF (UGC under Rajiv Gandhi National Fellowship Scheme)
- 2005 Certificate of merit in the subject of Immunology (B.Sc.,)
- 2002 Class first Rank in Intermediate School
- 2000 School Third Rank in SSLC

## VISITED COUNTRIES

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Chile (South America), Germany, Thailand

## RESEARCH INTEREST

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Bioinformatics - Comparative and Functional Genomics - Big Data Analysis, Computational Chemistry - Computer Aided Drug Designing

## PROJECT DETAILS (PRINCIPAL INVESTIGATOR)

Name of funding agency	Title	Amount Rs.	Status
BIRAC (SBIRI)	Mechanistic and Structural Insights into the Novel Methylated Peptide Inhibitor/s as multi-target drug for Cancer associated Parkinsonism	0. 50 laks	Submitted (2020)
DBT	An Indels Specific Insights into Coronavirus Proteins Persistent Identification and Preparation of Novel Hydrophilic Herbal Extracts as multi-target Inhibitors for SARS-CoV-2 by In Silico and In Vitro Approach	0. 80 laks	Submitted (2020)
DBT, India and BMBF, Germany	A Comprehensive Investigation of Potential Phytotherapeutic Biopharmaceuticals to treat Diabetes mellitus	1. 50 crores	Submitted (2020)
BIRAC (BIG)	Therapeutic evaluation of Pongamia pinnata extracts containing potential inhibitors against liver cancer - A reverse pharmacology approach	0. 50 laks	Submitted (2020)

## LIST OF PUBLICATIONS

Total Papers	16
Total Impact Factor	30.248
Average Impact Factor	1.8905
Citations	330 (up to date)
h-index	8
i10-index	8
Google Scholar	<a href="https://scholar.google.com/citations?user=pg0dkPYAAAAJ&amp;hl=en">https://scholar.google.com/citations?user=pg0dkPYAAAAJ&amp;hl=en</a>

2018-2021

1. Vagdevi H R, Senthilkumar Sivanesan, Anand Koppal, **Shanmugam Anandakumar**, Sukumar Ethirajan, Rajagopalan Vijayaraghavan. Rotenone-induced Parkinsonism is attenuated by Embelin and L-DOPA combination therapy in mice. Current Molecular Pharmacology (Under Review **IF: 3.283**)
2. **Anandakumar, S.**, Damodharana, K., Wilson, E., Narayanana, K. B., Suresh, G., Kanakavali, K., and Tamizh, M. M. Potential phytopharmaceutical constituents of Solanum trilobatum L. as significant inhibitors against COVID-19: Robust-binding mode of inhibition by molecular docking, molecular dynamics, PASS-aid bioactivity and ADMET investigations. Journal of Biomolecular Structure and Dynamics, 2020, (under review **IF: 3.220**)

3. Lavanya Jayaraman, Subhashini Shivaji and Shanmugam Anandakumar. Phytochemical screening, cytotoxic activity and molecular docking studies of *Eclipta alba* leaves extract against Oral Cancer. Journal of Asian Natural Products Research, 2021 (Under Review **IF: 1.345**)
4. Suresh, Sarangapani Muniraja, Mukesh Doble, **Shanmugam Anandakumar**, Synthesis, intrinsic spectra, crystal structural, invitro/insilico characterizations of N-alkyl-/ bis- indolinedione molecules. Journal of Molecular Structure 2020 (Under Review **IF: 2.011**)
5. **Shanmugam Anandakumar**, Saravanan Vijayakumar, Nagarajan Arumugam and M. Michael Gromiha, Mitochondrial non-coding rna database. Mitochondrial DNA 2019, (Under Review **IF: 1.076**).
6. Suda Parimala Ravindran, **Shanmugam Anandakumar** and Nagarajan Arumugam. Insilico Analysis of Indels Specific to Snake Venom Proteins: Journal of Evolutionary Biology 2020 (Under Review **IF: 2.541**)

2017

7. **Shanmugam Anandakumar**, Nagarajan Arumugam, Piramanayagam Shanmughavel. Non-coding DNA – a brief review. Journal of Applied Biology and Biotechnology 2017, 5 (05): 42-47.

2016

8. S'busiso Mfan'ele Nkosi, Krishnan Anand, **S Anandakumar**, Sanil Singh, Anil Amichund Chuturgoon, Robert Moonsamy Gengan. Design, synthesis, anticancer, antimicrobial activities and molecular docking studies of novel quinoline bearing dihydropyridines. Journal of Photochemistry and Photobiology B: Biology, 2016, 165, 266–276(**IF: 4.383**)
9. Nagarajan Arumugam, **Shanmugam Anandakumar**. Mini review on Corn cob biomass: a potential resource for value-added metabolites. European Journal of Experimental Biology, 2016, 6(5): 9-13 (**IF:1.91**)
10. Nagarajan Arumugam, **Shanmugam Anandakumar**, Aslambasha Zackaria. Mini review on Alginate: Scope and Future perspectives. J. Algal Biomass Utiln, 2016, 7(1): 45-55

2015

11. **Shanmugam Anandakumar**, Saravanan Vijayakumar, Nagarajan Arumugam and M. Michael Gromiha, Mammalian Mitochondrial non-coding rna database. Bioinformation 2015, 11(11):512-513 (**IF:0.60**). Availability: <http://www.iitm.ac.in/bioinfo/mmndb/>
12. Krishnamoorthy Shanmugaraj, **Shanmugam Anandakumar** and Malaichamy Ilanchelian. Unraveling the binding interaction of Toluidine blue O with bovine hemoglobin-A multi spectroscopic and molecular modeling approach. RSC Advances, 2015, 5:3930-3940 (**IF: 3.119**)
13. Krishnamoorthy Shanmugaraj, **Shanmugam Anandakumar** and Malaichamy Ilanchelian. Probing the binding interaction of thionine with lysozyme: A spectroscopic and molecular docking investigation, Dyes and Pigments. 2015, 112: 210–219 (**IF: 4.613**)

2014

14. **Shanmugam Anandakumar**, Suda Parimala Ravindran and Piramanayagam Shanmughavel. Functional annotation of introns in mitochondrial genome - a brief review. Mitochondrial DNA, 2014, 1-4, (doi:10.3109/19401736.2014.919454) (**IF: 1.076**)
15. Perumal Manivel, **Shanmugam Anandakumar** and Malaichamy Ilanchelian. Exploring the interaction of the photodynamic therapeutic agent thionine with bovine serum albumin: Multispectroscopic and molecular docking studies, Journal of biological and chemical luminescence (DOI:10.1002/bio.2812 **IF:1.855**)
16. Arumugam Selva sharma, **Shanmugam Anandakumar** and Malaichamy Ilanchelian. In vitro investigation on domain specific interactions of phenothiazine dye with serum proteins by spectroscopic and molecular docking approaches. RSC Advances 4: 36267-36281 (**IF: 3.119**)
17. Arumugam Selva sharma, **Shanmugam Anandakumar** and Malaichamy Ilanchelian. A combined spectroscopic and molecular docking studies on site specific binding interaction of Toluidine Blue O with Human and Bovine serum albumins. Journal of Luminescence 2014, 151;206–218 (**IF:3.280**)
18. Krishnamoorthy Shanmugaraj, **Shanmugam Anandakumar** and Malaichamy Ilanchelian. Exploring the biophysical aspects and binding mechanism of thionine with bovine hemoglobin by optical spectroscopic and

molecular docking methods. Journal of Photochemistry and Photobiology B: Biology, 2014, 131:43–52 (IF: 4.383)

19. Ondari Nyakundi Erick, M.Nalini Padmanabhan, P.Shanmughavel, Amit Patidar and S.Anandakumar. Molecular modeling and docking studies of dihydrodipicolinate reductase enzyme (DHDPR) of *streptococcus suis* and *streptococcus parauberis*. Adv. Pharmacol. Toxicol. 2014, 15 (2):7-12

2012

20. Pushparaj Karthika Chitravel Vadivalagan, Chinnapan Gunasekaran and **Shanmugam Anandakumar**. DNA Barcoding of selected dragonfly species (Libellulidae and Aeshnidae) for species authentication with phylogenetic assessment. European Journal of Experimental Biology, 2012, 2 (6):2158-2165 (IF:1.91)

2008

21. **S.Anandakumar**, V. Saravanan and P. Shanmughavel. IMPPDS - Indian Medicinal Plants Protein Dataset. Journal of Proteomics & Bioinformatics, 2008, 1: 230-232 (IF:2.15 \*)
22. **S.Anandakumar** and P.Shanmughavel. Computational Annotation for Hypothetical Proteins of Mycobacterium Tuberculosis. Journal of Computer Science & Systems Biology (JCSB), 2008, 1: 050-062 (IF:1.59 \*)

## SEQUENCE PUBLICATIONS

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LOCUS: KX531093 946 bp DNA linear ENV 17-JAN-2017

DEFINITION: **Uncultured bacterium clone sam 16S ribosomal RNA gene, partial sequence.**

ACCESSION: KX531093

AUTHORS: Arumugam,N. and **Anandakumar,S.**

JOURNAL: Submitted (12-JUL-2016) Biotechnology, Indian Institute of Technology-Madras, Saradar Patel Road, Chennai, Tamilnadu 600036, India

Links: <https://www.ncbi.nlm.nih.gov/nucore/KX531093.1>

## ABSTRACT PUBLICATIONS

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1. S. Anandakumar and P. Shanmughavel. **Filling the gaps in Non-coding DNA using comparative genomics- a review**, pp: 43, 6th Israeli Bioinformatics Symposium, June 24<sup>th</sup>, 2014 (<http://odem.md.biu.ac.il/ibs16/>).

## ORAL/POSTER PRESENTATION

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1. **Synthesis, spectral, crystal structural characterizations and invitro/insilico studies of N-alkyl- bis- isatin derivatives**, oral presented in International Conference on Advances in Chemistry with Specific Reference to Catalysis, Sensors, Drug Delivery and Energy Materials, Department of Physical Chemistry, University of Madras, 9th-10th January 2020
2. **Comparative Identification of Novel genes from Non-Coding Regions of Plasmodium**, poster accepted in the International Conference in Bioinformatics and Computational Biology (ISCB-LatinAmerica-2012), Santiago, Chile, March 17-22, 2012
3. **Indian medical plants protein datasets**, presented oral in National Symposium on Herbal Drug Research, Bharathiar University, Coimbatore, September 25 & 26, 2008.

## SEMINAR/CONFERENCE/WORKSHOP PARTICIPATED

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1. 3rd IIT madras - TOKYO TECH join symposium on Algorithms and Applications of Bioinformatics", IIT Madras, Chennai, Tamil Nadu, India. November 5-6, 2015,
2. National seminar on "**Biodiversity Informatics**", Department of Bioinformatics, Bharathiar university, Coimbatore-641 046, Tamil Nadu, India. 30.08.2013,
3. National seminar on "**Cheminformatics**", Department of Bioinformatics, Bharathiar University, Coimbatore- 641 046, Tamil Nadu, India. 26<sup>th</sup>August, 2012

4. National seminar on “**Current concepts in Bioinformatics**”, Department of Bioinformatics, Bharathiar university, Coimbatore-641 046, Tamil Nadu, India. 19<sup>th</sup> March, 2012
5. National seminar cum workshop on “**Computational Biology**”, Department of Bioinformatics, Bharathiar university, Coimbatore-641 046, Tamil Nadu, India. 10-11 March, 2011
6. National seminar on Bioinformatics, **Motif10**, Department of Bioinformatics, Bharathiar University, Coimbatore-641 046, Tamil Nadu, India. 6<sup>th</sup> October, 2010
7. Workshop on “**Advances in Computer Aided Drug Design**”, University of Madras, Chennai-25, Tamil Nadu, India. August 2 – 4, 2010
8. Symposium on “**Recent trends in Bioinformatics and Molecular modelling**”, University of Madras, Chennai-25, Tamil Nadu, India. July 30<sup>th</sup> - August 1<sup>st</sup>, 2010
9. National seminar on “**Intellectual property rights (Natural products)**”, Department of Botany, Bharathiar university, Coimbatore-641 046, Tamil Nadu, India, February 9<sup>th</sup>, 2009.
10. National seminar on “**Man and Microbes**”, Department of Microbial Biotechnology, Bharathiar university, Coimbatore-641 046, Tamil Nadu, India. 27<sup>th</sup> January, 2009
11. National seminar on “**New Trends in Bioinformatics**”, Department of Bioinformatics, Bharathiar university, Coimbatore-641 046, Tamil Nadu, India. 25<sup>th</sup> Feb, 2008
12. International seminar cum workshop on “**Molecular modeling and drug discovery**”, Department of Bioinformatics, Bharathiar university, Coimbatore-641 046, Tamil Nadu, India, July, 27-28, 2007.
13. National seminar on “**Advances in structural and functional Bioinformatics**”, Department of Bioinformatics, Bharathiar university, Coimbatore-641 046, Tamil Nadu, India, January 25<sup>th</sup>, 2008.
14. International symposium on “**Recent trends in macro molecular structure and function**”, University of Madras, Guindy campus, Chennai-600 025, India, January 07-11, 2008
15. National seminar on “**New trends in Bioinformatics**”, Department of Bioinformatics, Bharathiar University, Coimbatore-641 046, Tamil Nadu, India, February 12<sup>th</sup>, 2007,
16. National symposium on Bioinformatics, **Motif 05** (October 6<sup>th</sup>, 2005) & **Motif 06** (October 11<sup>th</sup>, 2006), Department of Bioinformatics, Bharathiar university, Coimbatore- 641 046, Tamil Nadu, India.
17. International symposium on “**RNAi and microRNA in development and health**”, centre for cellular and molecular biology, Hyderabad- 500 007, India, February 23-24, 2006.
18. National level Bioconsoria on “**recent trends in Biological Science**”, Department of Bioscience, Vysya College, Salem, Tamil Nadu, India, February 20<sup>th</sup> and 21<sup>st</sup>, 2004,

#### **BIOINFORMATICS SKILLS**

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**Sequence Analysis Tools:** BLAST, Genemark, Coding potential calculator (CPC), Pfam, InterProScan, Tandem Repeat Finder, ORF Finder, Repeat Masker, RNAmmer, COG annotation, ScanProsite, COGnitor, ProDom, PROFAT, PROTFUN, CD-Search

**Multiple Sequence Alignment & Phylogenetics Analysis:** ClustalW and X, MEGA, PHYLIP.

**Visualization Tools:** PyMol, UCSF-Chimera, Rasmol, Mercury, Spdbv

**Chemistry Drawing Tools:** ChemDraw, ChemSketch

**Modelling Tools:** Discover Studio 2019, Schrodinger Suite 2009, Modeller9v2, Swiss-model, I-Tasser, Robetta CPH Models, 3D-Jigsaw

**Docking Tools:** Glide (Schrodinger Suite 2009), LigPlot, Autodock4, Argus Lab, Patch dock, Flexx,.

**Molecular Dynamics Simulation:** GROMACS and DESMOND.

**Metabolic Pathway Simulation:** Gepasi, Cell designer

**Commercial Tools:** Discovery Studio, Schrodinger Suite 2009 (All Modules), CLC genomic WorkBench

(These tools have been enlisted only to describe my familiarity in handling them but not restricted to the list alone)

**IT SKILLS:**

Operating system: Linux, Windows.

**Languages:** C, C++, Perl, PHP, R(Beginner)

Multimedia tools: Adobe Photoshop, Macromedia flash, Dream weaver

Databases: MySQL

**PERSONAL DETAIL**

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Date of birth: 15 May 1985

Nationality: Indian

Marital Status : Married

Languages Known : English, Tamil

Address: 5/243, Near High School, N.Puduppaty(po), Namakkal-637020

Current Address: No: 33, Raghavendrast, Ganapathy Nagar,  
Thirumullaivoyal, Chennai-62

Mobile: **(+91)9600553587**

Phone:

Gender: male

E-mail: **bioinfoanand@gmail.com**

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