

Dr. Balu Kamaraj Ph. D.,

Assistant Professor - Bioinformatics,
Department of Neuroscience Technology,
College of Applied Medical Sciences in Jubail (CAMSJ),
Imam Abdulrahman Bin Faisal University,
(Formerly: University of Dammam),
P. O. Box 4030 Jubail, 35816,
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Personal Data

Nationality	Indian
Date of Birth	19.10.1986
Department	Department of Neuroscience Technology, College of Applied Medical Science (Jubail)
Email	krbalu2010@gmail.com
Mobile No.	+ 966 507252709

Language Proficiency

Language	Read	Write	Speak
Arabic	X	x	X
English	✓	✓	✓
Others - Tamil	✓	✓	✓

Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
Sep 2014	Ph. D.,	INDIA	Vellore Institute of Technology (VIT University), Vellore
June 2011	M.Phil.	INDIA	PRIST University, Tanjore
May 2009	M.Sc., Bioinformatics	INDIA	University of Madras, Chennai
May 2007	B.Sc., Biotechnology	INDIA	Vellore Institute of Technology, Vellore

PhD, Fellowship Research Title: (Academic Honors or Distinctions)

PhD	Studies of Deleterious mutations on OCA I-IV genes and their structural and functional Consequences
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Working Experience

Job Rank	Place and Address of Work			Date
<i>Coordinator of College Scientific productivity Unit</i>	College of Applied Medical Sciences - Jubail (CAMSJ)	Imam Abdulrahman Bin Faisal University (Formerly: University of Dammam)	Dec 2021	Till date
<i>Member of Quality accreditation committee</i>	College of Applied Medical Sciences - Jubail (CAMSJ)	Imam Abdulrahman Bin Faisal University (Formerly: University of Dammam)	Dec 2021	Till date
<i>Assistant Professor</i>	Department of Neuroscience Technology, College of Applied Medical Sciences - Jubail (CAMSJ)	Imam Abdulrahman Bin Faisal University (Formerly: University of Dammam)	Dec 2018	Till date
Scientific Manager	Excelra Knowledge solution private Ltd (GVKBIO)	Hyderabad, India	Jun 2017	Nov2018
Postdoctoral Researcher	Excelra Knowledge solution private Ltd (GVKBIO)	Hyderabad, India	Nov 2016	May 2017
Postdoctoral Researcher	Group of PLASMANT, University of Antwerp, Belgium-2610	University of Antwerp, Belgium-2610	Sep 2014	Sep 2016
Visiting Postdoctoral fellow	Prof. Ronen Zangi research Lab, Faculty of chemistry, University of the Basque country, San Sebastian, Spain.	University of the Basque country, San Sebastian, Spain.	Dec 2015	Feb 2016
Research Associate	School of Bioscience and Biotechnology	Research Associate	Nov 2011	Aug 2014

Scientific Achievements

Research Areas of Interest

1.	Molecular dynamics simulation. Expertise in GROMACS, DESMOND packages
2.	Homology Modeling, Threading based protein modeling, Antibody Modeling using <i>In-silico</i> approaches
3.	Structure based drug designing, Virtual screening and Molecular Docking. Schrödinger suite, Discovery studio, AUTODOCK, PYRX, etc.
4.	Identify the mutational effect on protein structures using molecular modelling and molecular dynamics simulation approaches.
5.	Genomics analysis on Leukemia (RNA-seq, DEG and network analysis to identify the targets (Biomarkers)
6.	R, Python and d3 (Java)

Published Refereed Scientific Researches

(In Chronological Order Beginning with the Most Recent)

[*Corresponding Author]

Total Impact Factor: >125, Total citation >720; H-index = 15; i10-index = 20.

#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
1.	Kumar, D. T., Kumar, S. U., Jain, N., Sowmya, B., Balsekar, K., Siva, R., ... & Zayed, H.	(2022). Computational structural assessment of BReast Cancer type 1 susceptibility protein (BRCA1) and BRCA1-Associated Ring Domain protein 1 (BARD1) mutations on the protein-protein interface. <i>Advances in Protein Chemistry and Structural Biology</i> Impact Factor = 2.44	
2.	Kumar, S. U., Kamaraj, B., Varghese, R. P., Preethi, V. A., Bithia, R., & Doss, C. G. P.	(2022). Mutations in G6PC2 gene with increased risk for development of type 2 diabetes: Understanding via computational approach. <i>Advances in Protein Chemistry and Structural Biology</i> . Impact Factor = 2.44	
3.	Borgio, J. F., Alsuwat, H. S., Alamoudi, W., Hegazi, F. M., Al Otaibi, W. M., M Ibrahim, A., Almandil, N. B., Al-Amodi, A. M., Alyousef, Y. M., AlShwaimi, E., Almasoud, N., Kamaraj, B., & Sayed, A.	(2021). Exome array identifies functional exonic biomarkers for pediatric dental caries. <i>Computers in biology and medicine</i> , 105019. Advance online publication. https://doi.org/10.1016/j.compbiomed.2021.105019 . Impact Factor = 4.59.	
4.	Al-Subaie AM, Kamaraj B*	The Structural Effect of FLT3 Mutations at 835th Position and Their Interaction with Acute Myeloid Leukemia Inhibitors: In Silico Approach. <i>International Journal of Molecular Sciences</i> . 2021; 22(14):7602. https://doi.org/10.3390/ijms22147602 . Impact Factor = 5.92.	
5.	Aljindan, R. Y., Al-Subaie, A. M., Al-Ohali, A. I., & Kamaraj, B*.	(2021). Investigation of nonsynonymous mutations in the Spike protein of SARS-CoV-2 and its interaction with the ACE2 receptor by molecular docking and MM/GBSA approach. <i>Computers in Biology and Medicine</i> , 104654. Impact Factor = 4.59.	
6.	Silambarasan, S., Logeswari, P., Sivaramakrishnan, R., Incharoensakdi, A., Cornejo, P., Kamaraj, B., & Chi, N. T. L.	(2021). Removal of nutrients from domestic wastewater by microalgae coupled to lipid augmentation for biodiesel production and influence of deoiled algal biomass as biofertilizer for <i>Solanum lycopersicum</i> cultivation. <i>Chemosphere</i> , 268, 129323.. Impact Factor = 5.78	
7.	Silambarasan, S., Logeswari, P., Sivaramakrishnan, R., Pugazhendhi, A., Kamaraj, B., Ruiz, A., ... & Cornejo, P.	(2021). Polyhydroxybutyrate production from ultrasound-aided alkaline pretreated finger millet straw using <i>Bacillus megaterium</i> strain CAM12. <i>Bioresource Technology</i> , 325, 124632. Impact Factor = 7.54	
8.	Sankar, S., Younes, S., Ahmad, M. N., Okashah, S. S., Kamaraj, B., Al-Subaie, A. M., & Zayed, H.	(2020). Deciphering the Role of Filamin B Calponin-Homology Domain in Causing the Larsen Syndrome, Boomerang Dysplasia, and Atelosteogenesis Type I Spectrum Disorders via a Computational Approach. <i>Molecules</i> , 25(23), 5543. Impact Factor = 3.27	
9.	Kamaraj, B*, Al-Subaie, A. M., Ahmad, F., Surapaneni, K. M., & Alsamman, K.	(2020). Effect of novel leukemia mutations (K75E & E222K) on interferon regulatory factor 1 and its interaction with DNA: insights from molecular dynamics simulations and docking studies. <i>Journal of Biomolecular Structure and Dynamics</i> , 1-13. Impact Factor = 3.22	
10.	Mishra, S., Shah, M. I., Gopalakrishnan, C., Al-Subaie, A. M., Magesh, R., & Kamaraj, B.	(2020). Network analysis of transcriptomics data for the prediction and prioritization of membrane-associated biomarkers for idiopathic pulmonary fibrosis (IPF) by bioinformatics approach. <i>Advances in Protein Chemistry and Structural Biology</i> , 123, 241-273. Impact Factor = 2.44	
11.	Borgio, J. F., Alsuwat, H. S., Al Otaibi, W. M., Ibrahim, A. M., Almandil, N. B., Al Asoom, L. I., Kamaraj B., & AbdulAzeez, S.	(2020). State-of-the-art tools unveil potent drug targets amongst clinically approved drugs to inhibit helicase in SARS-CoV-2. <i>Archives of Medical Science: AMS</i> , 16(3), 508. Impact Factor = 2.81.	

12.	Kumar, S. U., Kumar, D. T., Mandal, P. D., Sankar, S., Haldar, R., Kamaraj, B., ... & Zayed, H. (2020). Comprehensive in silico screening and molecular dynamics studies of missense mutations in Sjogren-Larsson syndrome associated with the ALDH3A2 gene. In <i>Advances in Protein Chemistry and Structural Biology</i> (Vol. 120, pp. 349-377). Academic Press. Impact Factor = 2.44
13.	Gopalakrishnan, C., Al-Subaie, A. M., Yeh, H. Y., Tayubi, I. A., & Kamaraj, B*. (2019). Prioritization of SNPs in γ -LAT-1 culpable of Lysinuric protein intolerance and their mutational impacts using protein-protein docking and molecular dynamics simulation studies. <i>Journal of cellular biochemistry</i> . Impact Factor = 4.24
14.	Thirumal Kumar, D., Jain, N., Evangeline, J., Kamaraj, B., Siva, R., Zayed, H., & George Priya Doss, C. (2019). A computational approach for investigating the mutational landscape of RAC-alpha serine/threonine-protein kinase (AKT1) and screening inhibitors against the oncogenic E17K mutation causing breast cancer. <i>Computers in Biology and Medicine</i> . Impact Factor = 3.434.
15.	Nagarajan, N., Yapp, E. K., Le, N. Q. K., Kamaraj, B., Al-Subaie, A. M., & Yeh, H. Y. (2019). Application of Computational Biology and Artificial Intelligence Technologies in Cancer Precision Drug Discovery. <i>BioMed Research International</i> , 2019. Impact Factor = 2.28.
16.	Srivastava, Gyan P., Brinda Ravikumar, Yingtao Bi, Smriti Mishra, Amit Das, Mohammad I. Shah, Balu Kamaraj et al. "DISCOVERING ALZHEIMER'S DISEASE NETWORKS IN ACCELERATING MEDICINES PARTNERSHIP-ALZHEIMER'S DISEASE DATASETS." <i>Alzheimer's & Dementia: The Journal of the Alzheimer's Association</i> 15, no. 7 (2019): P1588. Impact Factor = 17.13
17.	Chirumamilla CS, Palagani A, Kamaraj B, et al (2017) Selective Glucocorticoid Receptor Properties of GSK866 Analogs with Cysteine Reactive Warheads. <i>Frontiers in Immunology</i> . 2017;8:1324. doi:10.3389/fimmu.2017.01324. Impact Factor = 5.085
18.	Kamaraj B. and Purohit R. (2016), Mutational Analysis on Membrane Associated Transporter Protein (MATP) and Their Structural Consequences in Oculocutaneous Albinism Type 4 (OCA4) – A Molecular Dynamics Approach. <i>Journal of Cellular Biochemistry</i> . doi:10.1002/jcb.25555. Impact Factor = 4.24.
19.	Narjes Khosravian, Balu Kamaraj, Erik Neyts, and Annemie Bogaerts (2016) Structural modification of P-glycoprotein induced by OH radicals: Insights from atomistic simulations. <i>Scientific Reports</i> .6. (Nature). Impact Factor = 4
20.	Kamaraj B, Bogaerts A (2015) Structure and Function of p53-DNA Complexes with Inactivation and Rescue Mutations: A Molecular Dynamics Simulation Study. <i>PLoS ONE</i> 10(8): e0134638. doi:10.1371/journal.pone.0134638. Impact Factor = 2.74.
21.	Annemie Bogaerts, Narjes Khosravian, Jonas Van der Paal, Christof C W Verlackt, Maksudbek Yusupov, Balu Kamaraj and Erik C Neyts. (2015). Multi-level molecular modelling for plasma medicine. <i>J. Phys. D: Appl. Phys.</i> 49 054002. doi:10.1088/0022-3727/49/5/054002. Impact Factor = 3.169.
22.	Kamaraj B, Rajendran V, Sethumadhavan R, Purohit R. 2013. In-silico screening of cancer associated mutation on PLK1 protein and its structural consequences. <i>Journal of Molecular Modelling</i> . 9(12):5587-99. Impact Factor= 1.35.
23.	Kamaraj B, Rajendran V, Sethumadhavan R, Vinay Kumar CH, Purohit R. 2014. Mutational analysis of FUS gene and its structural and functional role in Amyotrophic lateral sclerosis 6. <i>Journal of Biomolecular Structure & Dynamics</i> , Vol. 14, 1-11. DOI:10.1080/07391102.2014.915762. Impact Factor = 3.22.
24.	Kamaraj B, Rituraj Purohit . 2014. Computational Screening of Disease-associated mutations in oca2 Gene. <i>Cell Biochemistry and Biophysics</i> . 68(1):97-109. Impact Factor = 2.07.
25.	Balu Kamaraj and Rituraj Purohit, "Mutational Analysis of Oculocutaneous Albinism: A Compact Review," <i>BioMed Research International</i> , vol. 2014, Article ID 905472, 10 pages, 2014. doi:10.1155/2014/905472. Impact Factor = 2.28.
26.	Kamaraj B, Gopalakrishnan C, Purohit R. 2014. In Silico Analysis of miRNA-Mediated Gene Regulation in OCA and OA Genes. <i>Cell biochemistry and biophysics</i> , 70(3), 1923-1932. Impact Factor = 2.07.
27.	Gopalakrishnan C, Kamaraj B, Purohit R. 2014. Mutations in microRNA binding sites of CEP genes involved in cancer. <i>Cell biochemistry and biophysics</i> , 70(3), 1933-1942. Impact Factor = 2.07.

28.	Panchalee Bhaumik, Chandrasekhar Gopalakrishnan, Balu Kamaraj, and Rituraj Purohit, "Single Nucleotide Polymorphisms in MicroRNA Binding Sites: Implications in Colorectal Cancer," <i>The Scientific World Journal</i> , vol. 2014, Article ID 547154. doi:10.1155/2014/547154.
29.	Balu K, Rajendran V, Sethumadhavan R, Purohit R. 2013. Investigation of binding phenomenon of NSP3 and p130Cas mutants and their effect on cell signalling. <i>Cell Biochemistry and Biophysics</i> . 67(2):623- 33. Impact Factor = 2.07.
30.	Kamaraj B, Kumar A, Purohit R. 2013. Evolutionary reconstruction and population genetics analysis of aurora kinases. <i>PLoS One</i> . 8(9):e75763. doi: 10.1371/journal.pone.0075763. Impact Factor = 2.74.
31.	Kamaraj B, Rituraj Purohit. 2013. In Silico Screening and Molecular Dynamics Simulation of Disease - Associated nsSNP in TYRP1 Gene and Its Structural Consequences in OCA3," <i>BioMed Research International</i> , vol. 2013, Article ID 697051, 13 pages, 2013. doi:10.1155/2013/697051. Impact Factor = 2.28.
32.	Kamaraj B, Purohit R. 2013. In-silico analysis of Betaine Aldehyde Dehydrogenase2 of <i>Oryza sativa</i> and significant mutations responsible for fragrance. <i>Journal of Plant Interactions</i> . 8(4):321- 333. Impact Factor = 2.99.
33.	Kamaraj B, Purohit R. 2013. Mutational analysis of TYR gene and its structural consequences in OCA1A. <i>Gene</i> . 513(1):184-95. Impact Factor = 2.984
34.	Kumar A, Kamaraj B, Sethumadhavan R, Purohit R. 2013. Evolution driven structural changes in CENP-E motor domain. <i>Interdiscip Sci</i> . 5(2):102-11. Impact Factor = 1.512.
35.	Gavish Gulati, Krutika Satish Gaonkar, Balu Kamaraj, Ambuj Kumar, Rituraj Purohit. 2013. Structure based energy calculation to determine the regulation of G protein signalling by RGS and RGS-G protein interaction specificity. <i>Egyptian Journal of Medical Human Genetics</i> . 14(2):135- 142. Impact Factor = 0.53
36.	Gulati G, Gaonkar KS, Kamaraj B, Kumar A, Purohit R. 2012. Structure based energy calculation to determine the regulation of G protein signalling by RGS and RGS-G protein interaction specificity. <i>Interdiscip Sci</i> . 4(3):173-82. Impact Factor = 1.512

Scientific Publications (BOOKS, Translations, Chapter in Books, etc.)

#	Name of Authors(s)	Title of the Book Chapter	Publishers	Acceptance Date
1	Kumar, D. T., Kumar, S. U., Jain, N., Sowmya, B., Balsekar, K., Siva, R., ... & Zayed, H	Computational structural assessment of BReast CAncer type 1 susceptibility protein (BRCA1) and BRCA1-Associated Ring Domain protein 1 (BARD1) mutations on the protein-protein interface.	In <i>Advances in Protein Chemistry and Structural Biology</i> , Elsevier.	2022
2	Kumar, S. U., Kamaraj, B., Varghese, R. P., Preethi, V. A., Bithia, R., & Doss, C. G. P. (2022).	Mutations in G6PC2 gene with increased risk for development of type 2 diabetes: Understanding via computational approach	In <i>Advances in Protein Chemistry and Structural Biology</i> , Elsevier.	2022

3	Smriti Mishra, Mohammad Imran Shah, Udhaya Kumar. Thirumal Kumar, Chandrasekhar Gopalakrishnan, Abeer Mohammed Al-Subaie, R. Magesh, George Priya Doss, Balu Kamaraj* ,	Network analysis of transcriptomics data for the prediction and prioritization of membrane-associated biomarkers for idiopathic pulmonary fibrosis (IPF) by bioinformatics approach.	In Advances in Protein Chemistry and Structural Biology, Elsevier.	2020
4	Kumar, S. U., Kumar, D. T., Mandal, P. D., Sankar, S., Haldar, R., Kamaraj, B., Doss, G. P., & Zayed, H	Comprehensive in silico screening and molecular dynamics studies of missense mutations in Sjogren-Larsson syndrome associated with the ALDH3A2 gene.	In Advances in Protein Chemistry and Structural Biology, Elsevier. (Vol. 120, pp. 349-377)	2020

Conferences

	Name of Investigator(s)	Research Title	Conference and Publication Date
1.	Srivastava, Gyan P., Brinda Ravikumar, Yingtao Bi, Smriti Mishra, Amit Das, Mohammad I. Shah, Balu Kamaraj et al.	"DISCOVERING ALZHEIMER'S DISEASE NETWORKS IN ACCELERATING MEDICINES PARTNERSHIP-ALZHEIMER'S DISEASE DATASETS."	Alzheimer's & Dementia: The Journal of the Alzheimer's Association 15, no. 7 (2019): P1588.
2.	Berghe, W. V., Chirumamilla, C. S., Palagani, A., Verbeeck, M., Oksana, R., Kamaraj, B., ... & Houtman, R.	(2018). Molecular biochemical characterization of selective glucocorticoid receptor activities of GSK866 analogues with cysteine reactive warheads.	In Proceedings for Annual Meeting of The Japanese Pharmacological Society WCP2018 (The 18th World Congress of Basic and Clinical Pharmacology) (pp. PO2-5). Japanese Pharmacological Society.
3.		Presented poster on "Mutation and fragmentation of P-glycoprotein by plasma-generated OH radicals: A computational study",	2015 at ISPC 22 - 22nd International Symposium on Plasma Chemistry, University of Antwerp, Belgium.
4.		Presented poster on "Investigation of the binding p53 and DNA upon DNA-contact and rescue mutations and their effect on cancer",	2015 at ISPC 22 - 22nd International Symposium on Plasma Chemistry, University of Antwerp, Belgium.
5.		Participated in National Symposium cum Workshop "Recent Trends in Structural Bioinformatics and Computer Aided Drug Design" (SBCADD),	2012 at Alagappa University, Karaikudi, Tamil Nadu, India.
6.		Participated a national level technical Workshop on "Insilico Drug designing"	at IOCB, Bangalore.
7.		Participated a National level workshop on "Application of Bioinformatics in Drug Discovery & Drug Development"	at Presidency College, 2008, Chennai.

Current Research -AS PRINCIPAL INVESTIGATOR

#	Name of Investigator(s)	Research Title	Fund Details & Budget	Status
1.	Dr. Balu Kamaraj, Dr. Fazil Ahmad, Dr. Alsamman, Khaldoon, Dr. Abeer M Alsubaie, Dr. Surapaneni, KrishnaMohan.	2019-162-AMSJ: Differentially expressed genes (DEGs) analysis on Leukemia Saudis population to identify the potential biomarkers by Bioinformatics approach	Deanship of scientific research, IAU. Grant amount: SAR 1,20,000	Completed (March 2019 to Sep 2021)

Current Research – as CO-INVESTIGATOR

#	Name of Investigator(s)	Research Title	Fund Details & Budget	Status
1.	Dr. Fazil Ahmad, Dr. Krishna Mohan Surapaneni, Dr. Abeer M Alsubaie, Dr. Balu Kamaraj	2019-165-AMSJ: Anti-proliferative activity and Apoptotic induction of tannins extracted from Quercus infectoria on Oral cancer KB cell lines.	Deanship of scientific research, IAU. Grant amount: SAR 1,20,000	Completed (March 2019 to Aug 2021)

Awards and Honors:

	Awards and Honors:	International / National organization	Date
1	Research Publications rewards	IAU University, Saudi Arabia	2019-2021
2.	Best Research achievers award	VIT University, INDIA	2013
3.	Best Research achievers award	VIT University, INDIA	2012

Teaching Activities

Undergraduate & Postgraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
1	Introduction to Research Methods	NEURT-305	lectures
2	Research Methods and Applied Statistics	NEURT-406	lectures
3	Research Methodology	HIMT 416R, RMETH215	lectures
4	Health Information System	HIMT-332, HIMT-217	lectures
5	Health Information Management and Technology	HIMT-410	lectures

6	Bioinformatics		Lectures & Labs
7	Advanced Bioinformatics		Lectures

Supervision of Master and/or PhD Thesis

#	Degree Type	Title	Institution	Date
1.	B.Tech, Bioinformatics	Gopalakrishnan C, In Silico Analysis of miRNA-Mediated Gene Regulation in OCA and OA Genes.	VIT University, INDIA	2014
2.	B.Tech, Bioinformatics	A Kumar, Evolutionary reconstruction and population genetics analysis of aurora kinases.	VIT University, INDIA	2013

Contribution to Scientific Journals as an Editor or as A Member in The Editorial Board

	Type of Contribution	Journal	from	t
1	Academic Guest Editor	Frontiers in Medicine (Topic: Computational Genomics and Structural Bioinformatics in Personalized Medicines)	Feb, 2021	Till date
2	Academic Editor	BioMed research International Hindawi	July, 2020	Till date
3	Academic Editor	Current Chinese Science: Bioinformatics, Bentham Science	June, 2020	Till date

References

1. Dr. Rajith Baskaran, Principal Scientist, AGENDIA, Amsterdam, North Holland, Netherlands. rajith.bhaskaran@agendia.com
2. Dr. Dr. Rituraj Purohit, (PhD Adviser), Senior Scientist, CSIR-Institute of Himalayan Bioresource Technology (Council of Scientific & Industrial Research), Post Box No. 6 Palampur (H.P.) 176061 India. rituraj@ihbt.res.in
3. Dr. C. George Priya Doss, Ph.D, FLS (London) Department of Integrative Biology VIT, Vellore 632014, India. georgepriyadoss@vit.ac.in

Web links and online IDs:

https://scholar.google.com/citations?hl=en&user=OzFBjP0AAAAJ&view_op=list_works&sortby=pubdate
<http://orcid.org/0000-0002-9747-3984>
https://www.researchgate.net/profile/Balu_Kamaraj/research
 Publons ID: AAE-2852-2019
 Scopus ID: 55555141100