



G ARCHUNAN
UGC-BSR FACULTY FELLOW

Contact

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Academic Qualifications: M.Sc./Ph.D./D.Sc.

Qualification	Year	University	Subject/ Topic of Specialization
D.Sc.,	2015	Bharathiar University, Coimbatore	Zoology
Ph.D.,	1989	Banaras Hindu University, Varanasi	Zoology
M.Sc.,	1981	Annamalai University, Chidambaram	Zoology

Teaching Experience: 26 Years

Post held	Organization	Duration		Experience (in Years)
	University	From (Date)	To (Date)	
UGC-BSR Faculty Fellow (Professor Emeritus)	Bharathidasan University	2017	Till date	3

Professor	Bharathidasan University	2007	2017	10
Associate Professor	Bharathidasan University	2006	2007	2
Reader	Bharathidasan University	1999	2005	6
Senior Lecturer	Bharathidasan University	1998	1999	1
Lecturer	Bharathidasan University	1993	1998	5
Total				27 Years

Publications details

- **Number of publications: 214; Book chapters: 10**
- As per the **Web of Science, Thomson Reuters** citation database rating my **h index- 22** and overall **Citations- 1492**
- As per the **Scopus, Elsevier** citation database rating my **h index- 23** and overall **Citations-1686**
- As per the **Google Scholar, Google** citation database rating my **h index-30, i10 index-86, and total Citations-2779.**

(Data recorded on January 29th, 2020)

Research Experience: 36 Years

Additional Responsibilities

1. Head (i/c), Department of Biotechnology and Genetic Engineering, Bharathidasan University, Tiruchirappalli(2012-2013)
2. Head, Department of Animal Science, Bharathidasan University, Tiruchirappalli (2013-2017)
3. Director/Co-ordinator, Centre for Pheromone Technology, Bharathidasan University, Tiruchirappalli (2008-2017)
4. Co-ordinator, Centre of Excellence in Life Sciences, Bharathidasan University,

- Tiruchirappalli (2014-2017)
5. Syndicate Member, Bharathidasan University (2010-2012)
 6. Senate Member, Bharathidasan University (2012-2017)
 7. Co-ordinator (PG Programs) Department of Animal Science, Bharathidasan University (2003-2008)
 8. Deputy Co-ordinator UGC-SAP Programme, Department of Animal Science, Bharathidasan University (2013-2018)
 9. Co-ordinator, School of Engineering Technology, Bharathidasan University, Tiruchirappalli (2013-2015)
 10. Program In-charge, DST-FIST level I, Department of Animal Science, Bharathidasan University (2016-2017)
 11. Chair, School of Biotechnology, Bharathidasan University (2012-2013)
 12. Chair, School of Life Sciences, Bharathidasan University, (2016-2017)

Areas of Research

- Pheromone biology
- Immunology
- Reproductive Endocrinology.

Research Supervision / Guidance

Program of Study		Completed	Ongoing
Research	Ph.D.	25	05
	M.Phil.	30	-
Project	PG	60	05
	UG / Others	10	01

Funded Research Projects

Completed Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	CSIR	1997	2000	Identification of sex attractants in the urine of cow and the studies of their role in reproductive behaviour	5.5
2	ICAR	1998	2001	Rat pheromonal identification and its involvement in masking bait shyness: a novel approach in rpm	10.2
3	DST	2002	2005	Role of pheromone in buffalo reproduction	6.15
4	UGC	2003	2006	Isolation and sequencing of pheromone carrier protein in rat preputial gland and its bio assay	7.2
5	DST-JSPS (Indo-Japan)	2008	2010	Bioactivity of pheromonal compounds and their effect on cytosolic Ca ²⁺ dynamics in rat olfactory system	3.92
6	DBT-AIST (Indo-Japan)	2009	2013	Cross – genome survey of olfactory receptor in five eukaryotic genome with a special emphasis on receptors of odour response	18.55
				Assessment of estrus-specific pheromones with reference to kit	

7	DBT	2009	2013	development and enhancement of the reproductive efficiency in buffaloes	42.88
8	UGC	2010	2013	Investigation of isoforms and post translation modification of α_2u globulin in the preputial gland of house rat (<i>Rattus rattus</i>)	10.21
9	DST	2011	2014	Novel derivative of lovastatin as an anticancer agent	13.34
10	UGC-BSR One Time Grant	2011	2012	To develop a pheromonal trap for rodent pest management	7.0
11	ICAR	2013	2016	Luteinizing hormone -based sensor for estrus detection in buffaloes	48.77

Mentor for Post-doctoral fellows:

S. No	Funding agency	Project title	Year	Amount
1.	CSIR-RA	“Chemical characterization of bovine (<i>Bos taurus</i>) urine with special reference to reproductive behavior” Dr. K. Ramesh kumar	2001-2005	Rs. 3,04,000
2.	CSIR-RA	“Identification and bioassay of mouse (<i>Mus musculus</i>) urinary pheromones with special reference to estrous cycle” Dr. S. Achiraman	2005-2008	Rs. 3,04,000
3.	CSIR-RA	Molecular mechanism involved in the antiphospholip antibody-mediated pregnancy failure in the antiphospholipid syndrome Dr. S. Velayutha Prabhu	2013-2016	Rs. 13,81,200

4.	DST-Young Scientist	“Investigation of immunocompittance handicap hypotheses and MHC based mate choice in the tent-marking fruit bat <i>cynopterus sphinx</i> (Chiroptera: Pteropodidae)” Dr.R.Rajasekar	2013-2016	Rs. 22,83,000
5.	UGC-Kothari PDF	“Evulation neuroprotective potential of the traditional medicinal plants <i>Terminalia cebula</i> and <i>Terminalia arjuna</i> inhabiting Western Ghats ” Dr.N.Suganthi	2014-2017	Rs. 19,20,000
6.	CSIR-RA	“Trancriptome analysis in rodent pest species (<i>Rattus rattus</i>)” Dr.R.L.Rengarajan	2017-2020	Rs. 13,81,200
7.	SERB-NPDF	Bioavailability, biocompatibility, biodegradable and translation research targeting strategies of chitosan nanoparticles with anti-hyperglycemic potential of essential oil myrtenal in random model. Dr. A. Rathinam	2017-2019	Rs. 19,20,000

Ongoing Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	UGC-BSR Faculty Fellowship	2017	2021	Pheromone based biosensor for estrus detection in buffaloes	33

Distinctive Achievements / Awards

1. Research Associate
2. Research Associate
3. INSA-Visiting Fellowship
4. Commonwealth Fellowship
5. INSA-Bilateral Exchange Visiting Fellow(Indo-German)
6. Heiwa Nakajima Foundation Fellowship
7. Tamil Nadu Scientist Award (TANSA)- Biological Sciences
8. Heiwa Nakajima Foundation Fellowship
9. TWAS –CAS Visiting Fellowship(Indo-China)
10. UGC-BSR one time grant
11. INSA-Bilateral Exchange Visiting Fellow(Indo-German)
12. UGC-BSR Faculty Fellow

MoU/Research Collaboration

S. No.	Name of Agencies / Departments involved	Joint research projects carried out	Year
International			
1	Prof. A. Cavaggioni and Dr. C. Mucignat Department of Human Anatomy and Physiology, University of Padova, Padova, Italy	Pheromone Carrier Proteins	2007
2	Prof. Fulvio Esposito University of Camerino, Italy	Molecular Biology	2007
3	Prof. Y. Habara, Department of Veterinary Medicine, Hokkaido University, Sapporo, Japan.	Calcium Image Analysis of Olfactory Receptor Neurons	2007
4	Dr. J. H. Zhang, Institute of Zoology, Chinese Academy of Sciences, China	Pheromones identification in wild type rodents	2010
5	Dr.P. Thiyagarajan, Assistant Professor, Swire Institute of Marine Science, The University of Hong Kong, Hong Kong	Proteomics and Biomineralization	2011
6	Dr. P. Padmanabhan, Deputy Director, CONiC, Lee Kong Chian school of medicine, Nanyang technological university, Singapore.	Molecular imaging and Gene Expression	2015
7	Prof. SulaimanAli Al harbi, Department of Botany and Microbiology, King Saud University, Saudi Arabia	Microbiology	2015
National			

8	Dr. R. Sowdhamini, National Centre for Biological Science – TIFR, Bangalore.	Protein Folding, Lipocalins and Odorant –Binding Proteins	2004
9	Prof. V. Ramesh Saravanakumar, Department of Livestock Production and Management, Veterinary College and Research Institute, Nammakal	Buffalo Pheromones in Livestock Production	2008
10	Dr. K. Pandima Devi Assistant Professor Department of Biotechnology, Alagappa University Karaikudi, Tamil Nadu	Xenobiotic Metabolism	2008
11	Dr. Arvind Kumar Neurophysiology Division, CCMB, Hyderabad	Molecular Mechanism of Pheromone	2009
12	Dr. J. Angayarkanni Assistant Professor, Dept. of Biotechnology Bharathiar University, Coimbatore, Tamil Nadu	Cancer Therapy	2011
13	Dr. Sumana Chakravarty Chemical Biology Division, Indian Institute of Chemical Technology, Hyderabad	Chemical Signals and NeuroScience	2012
14	Dr. Dheer Singh Principal Scientist National Dairy Research Institute Karnal, Haryana.	Hormone Based Sensor for Estrus Detection in Buffaloes	2013
15	Dr. N. Srinivasan Molecular Biophysics Unit, IISC, Bangalore	Bioinformatics	2013
16	Prof. C. Sekar Department of Bioelectronics and Biosensors, Alagappa University, Karaikudi	Bio-sensor	2015
17	Dr. B. Sheela Rani Vice Chancellor, Sathyabama University, Chennai	Pheromone Biology	2015
18	Dr. Balanehru Subramanian Center for Animal Research, Training and Services (CARETS), Mahatma Gandhi Medical College and Research Institute Campus, Pillayarkuppam, Puducherry-607403	Proteomics	2017
19	Dr. Siva Kumar Division of Nanoscience Anna university BIT campus, Trichy	Nanotechnology	2017
20	Dr. K. Saravanan Department of Zoology NMC college, Trichy	Cancer Biology	2018
21	Prof. Veera Ravi Department of Biotechnology,	Microbiome	2018

	Alagappa University, Karaikudi		
22	Dr. V. Nithya, Department of Animal, Health and management, Alagappa University, Karaikudi	Indigenous Cow breeding and management	2018

Events organized in leading roles

Number of Seminars / Conferences / Workshops / Events organized: **23**

S. No	Title of event	Organization/ University	Date	Role
International level				
1.	Renowned Professors of Foreign Universities	Bharathidasan University, Tiruchirappalli	09.02.2013-15.02.2013	Organizing Secretary
2.	International Conference on Advances In Biotechnology and Patenting (ICABP -2013)	Bharathidasan University, Tiruchirappalli	18.02.2013-21.02.2013	Chairman
3.	International Conference on "Molecular Advances in Biomedical Research (ICMABR-18)"	Nehru Memorial College, Puthanampatti & Bharathidasan University, Tiruchirappalli	09.02.2018-10.02.2018	Organizing Secretary
4	Global Initiative Of Academic Networks (GIAN) Course on "A Recent Trend in Life Science Research with Special Reference to Molecular Imaging, Proteomics and Metabolomics"	Bharathidasan University, Tiruchirappalli	12.02.2018-16.02.2018	Course Coordinator
National level				
5.	UGC-Refresher course on "Hormones, Communication and Behaviour"			
6	Workshop on Molecular Tools in Animal Science Research			rganizing Secretary

7	Seminar on Recent trends in chemical signalling	Bharathidasan University	02.02.2009	Organizing Secretary
8	Symposium on Current Perspectives in Animal Biotechnology	Bharathidasan University	03.02.2011 - 04.02.2011	Organizing Secretary
9	Lecture Series on Biosciences-2011	Bharathidasan University	21.02.2011	Organizing Secretary
10	UGC Refresher Course on Life Sciences	Bharathidasan University	8.06.2011-30.06.2011.	Co-ordinator
11	Workshop on Livestock Breeding and Management and value added dairy products	Bharathidasan University	15.10.2011	Organizing Secretary
12	UGC Refresher Course on Advances in Bio-Sciences	Bharathidasan University	17.08.2014-07.09.2014	Co-ordinator
Extension activity for Farmers				
13	Livestock breeding and disease management	Olaiyur, Tiruchirappalli Dt.	28.06.2012	Co-ordinator
14	Livestock breeding, disease prevention & management and value added dairy products	Thirumalaisamuthiram, Tiruchirappalli Dt.	11.04.2014	Co-ordinator
15	Livestock breeding, disease prevention & management and value added dairy products	Mullippatti, Tiruchirappalli Dt.	12.04.2014	Co-ordinator
16	Advanced animal husbandry practices & service of natural insemination	Tiruvanaikovil, Tiruchirappalli Dt.	14.06.2014	Co-ordinator
17	Advanced animal husbandry practices & service of natural insemination	Saveriyarpuram, Pudukkottai Dt.	21.06.2014	Co-ordinator
18	Advanced animal husbandry practices & service of natural insemination	Mudhalaipatti, Karur Dt.	28.06.2014	Co-ordinator
19	Livestock breeding, Disease prevention and Management	Rengachippatti, Karur Dt.	19.12.2015	Co-ordinator

20	Advanced animal husbandry practices & service of natural insemination	Edumalai, Tiruchirappalli Dt.	08.10.2016	Co-ordinator
21	Advanced animal husbandry practices & service of natural insemination	Rengachippatti, Karur Dt.	15.10.2016	Coordinator
22	Advanced animal husbandry practices & service of natural insemination	Vellalappatti, Tiruchirappalli Dt.	04.03.2017	Coordinator
23	Livestock breeding, Disease prevention	Purathakkudi, TiruchirappalliDt	04.06.2018	Coordinator

Events Participated

Conferences / Seminars / Workshops: 10

1. Workshop-cum-seminar on “Scanning Electron Microscopy” conducted by the Department of Metallurgical Engineering, Banaras Hindu University, Varanasi from 25.02.1991 to 26.02.1991.
2. Workshop on “Andrology” conducted by the Centre for Male Reproductive & Sexual Medicine, Bombay held on 05.11.1995.
3. Workshop on “Recent Trends in Ethology and Behavioural Sciences” conducted by the Department of Zoology, Christ College, Iranjalakuda from 05.08.2003 to 08.08.2003.
4. Workshop on “Developing Winning Research Proposals” conducted by the National Academy of Agricultural Research Management, Hyderabad from 19.11.2012 to 21.11.2012.
5. Workshop on “Theory and Research Methods in Sciences” conducted by the Mother Theresa Women’s University, Kodaikanal from 14.09.2013 to 20.09.2013.
6. Workshop on “Resources and Technologies for Scholarly Information” conducted by the Department of Library and Information Science, Bharathidasan University, Tiruchirappalli held on 12.08.2014.

Other Training Programs

1. Training on “Techniques in Immunology, Cell Biology, and Molecular Biology” conducted by the Institute for Research in Reproduction (ICMR), Parel, Bombay from 06.11.1995 to 24.11.1995.
2. Training on “Analytical Instruments (Gas Chromatography)” conducted by the Centre of Advanced Study in Marine Biology, Parangipettai, Annamalai University from 27.01.1999 to 29.01.1999.
3. Training on GC-MS, HPLC, HPTLC, UV-VIS conducted by the Textiles Committee Regional Laboratory, 18-A, Keelamathur Pallivasal Street, Madurai held on 19.06.2001.

4. Training on “Application of Research Techniques in Reproductive Biomedicine” conducted by the National Institute of Health and Family Welfare, New Delhi from 01.09.2003 to 12.09.2003.

Overseas Exposure / Visits

S. No	Name of the Country & City	Organization/ University Visited
1.	Yokohama, Japan	International Federation of Comparative Endocrinological Societies
2.	Berlin, Germany	Institute for Zoo and Wildlife Research
3.	Munich, Germany	Training undergone at Munich University
4.	Padova, Italy	University of Padova
5.	Lille, France	University of Lille
6.	Asahikawa, Japan	Asahikawa Medical College
7.	Singapore	National University of Singapore
8.	Hong Kong	University of Hong Kong
9.	Asahikawa, Japan	Asahikawa Medical College
10.	Beijing, China.	Beijing Institutes for Life Sciences
11.	Singapore	Nanyang Technological University
12.	Krakow, Poland	Jagiellonian University
13.	Wroclaw, Poland	Wroclaw University
14.	Melbourne, Australia	International Chemical Ecology Conference

Membership in

Professional Bodies

1. Life Member: Society for Reproductive Biology and Comparative Endocrinology (SRBCE), Chennai
2. Life Member: Indian Science Congress Association, Calcutta
3. Life Member: Ethological Society of India, Bangalore
4. Life Member: National Academy of Science in India (NASI), Allahabad

Editorial Board

1. Scientific Reports
2. International Journal of Advanced Veterinary Science and Technology
3. Journal of Experimental Zoology
4. Biochemical and cellular Archives
5. Frontiers in Ecology and Evolution
6. Bioinformation
7. Journal of Dairy Science

Advisory Board

1. International Symposium on “Comparative Endocrinology and Integrative Physiology (CEIP-2015)”
2. Pre-satellite Symposium on “Trends in Thyroid Endocrinology (THYROID 2017)”
3. Post-satellite Symposium on “Integrative Stress/Ease Physiology and Endocrinology (STRESS 2017)”
4. UGC-SAP programme, University of Kerala, Trivandram (2016-2020)

Academic Bodies (such as Board of Studies etc.,)

S. No.	Post	Organization / University	Duration	
			From	To
1	Member, Board of Studies	Chairman-BOS of Biotechnology, Bharathidasan University	2012	2015
		Chairman-BOS of Zoology, Nehru Memorial College, Trichy	2013	2016
		Member BOS of Zoology, Govt Arts College, Karur	2011	2013
		Member BOS of Zoology, Annamalai University, Chidambaram	2012	2014
		Member BOS of Biotechnology, National College, Trichy	2012	2015
		Member BOS of Biotechnology, Dhanalakshmi Srinivasan College, Perambalur	2012	2015
		Member BOS of Zoology, Govt Arts College, Kumbakonam	2012	2014
		Member BOS of Gene Technology, JJ College, Pudukkottai	2012	2014
		Member BOS of Zoology, Holy Cross College, Trichy	2013	2015
		Member BOS of Biochemistry, St Joseph's College, Trichy	2013	2015
		Member BOS of Biotechnology, Jamal Mohamed College, Trichy	2014	2016
		Member BOS of Biotechnology, Seethalakshmi Ramaswami College, Trichy	2014	2016
		Member BOS of Zoology, AVVM Sri Pushpam College, Thanjavur	2014	2016
		Member BOS of Zoology, KMCPG Studies, Pudhucherry	2014	2017
		Member BOS of Advanced Zoology and Animal Biotechnology, Alagappa University, Karaikudi.	2015	2017

		Member BOS of Biotechnology & Gene Technology, Bharathidasan University, Trichy	2015	2018
		Member BOS of Biology, Gandhigram Rural Institute, Dindigul	2015	2016
		Member BOS of Zoology, Rajah Serfoji College, Thanjavur	2015	2016
		Member BOS of Biotechnology, ANJAC College, Sivakasi	2015	2017
		Member BOS of Zoology, Poompuhar College, Nagapattinam	2015	2017
		Member BOS of Zoology (Distance), Alagappa University, Karaikudi.	2015	2018
		Member BOS of Biotechnology, Thanthai Hans Rover College, Perambalur	2016	2018
		Member BOS of Biotechnology (regular), Alagappa University, Karaikudi.	2016	2019
		Member BOS of Biotechnology, Bishop Heber College, Trichy	2016	2018
		Member BOS of Zoology, Bharathiar University	2017	2019
		Member BOS of Zoology, Thanthai Hans Rover College, Perambalur	2018	2021
2	Member of Academic Council	St. Joseph's College, Trichy	2010	2013
		Jamal Mohamed College, Trichy	2011	2017
		A.V.C College, Mayiladuthurai	2012	2014
		National College, Trichy	2012	2014
		Chidambaram Pillai College for Women, Manachanallur	2012	2015
		Nehru Memorial College, Trichy	2012	2014
		Govt Arts College for Women's, Pudukkottai	2013	2015
		Bishop Heber College, Trichy	2013	2015
		Sir Issac Newton Arts & Science College, Nagapattinam	2014	2017
3	Member of Governing body/ Executive Council	Governing Body Member, St.Joseph's College,Trichy	2010	2013
		Executive member- BDU-BDC, Bharathidasan University, Trichy	2011	2014
		Executive member, IECD, Bharathidasan University, Trichy	2012	2014

	Expert Committee Member, Bharathidasan University Technological Park	2012	2015
	Governing Body Member, SrimadAndavan College of Arts & Science College, Trichy	2014	2016
	Expert Committee-Member, Adaikalamatha College, Vallam	2015	2017

Others

1. Scientist-in-charge: Institutional Animal Ethics Committee (IAEC), Bharathidasan University.
2. Subject Expert : IAEC J.J College, Pudukkottai
3. Academic Audit-Member: Bishop Heber College, Trichy
4. Member Secretary: Institutional Animal Ethics Committee (IAEC), Bharathidasan University.
5. Academic Audit-Member: Bharathiar University, Coimbatore
6. Academic Audit-Member: ADM college for Women
7. Academic Audit-Member: University of Madras
8. Academic Audit-Member: University of Kerala
9. Academic Audit-Member: Periyar University, Salem
10. Ethical Committee Member: Anna University, BIT campus, Trichy
11. Selection Committee member: Madurai Kamaraj University, Madurai
12. Selection Committee member for Principal Selection: Nehru Memorial College, Puthanampatti
13. Member: Asian Council of Science Editors, Deira Dubai. U.A.E

Resource persons in various capacities

Number of Invited / Special Lectures delivered: **101**

Others

1. Articles published in Newspapers / Magazines : -
2. Products developed : -
3. No. of PhD Thesis evaluated :109
4. No. of PhD Public Viva Voce Examination conducted : 64
5. Sequences submitted in GenBank :
 1. 50-gene sequences from rodent genome
 2. 2-protein sequences from rodents
 3. 1-Bioprospect submitted on vaginal microbiome profile in murrh buffalo during estrous cycle. <https://www.ncbi.nlm.nih.gov/sra/PRJNA510303>
 4. Proteins sequence submitted Buffalo veginal mucus, and Human saliva

Patent

1. Patent obtained on 28.12.2010 entitled “composition of enhancing bull sexlibido” Patent No.244991.
2. Patent filed on 05.02.2015 entitled “Methods to identify estrous by urinary pheromone compound” Patent Application No.577/CHE/2015.

Consultancy programs conducted:

S. No	Name of the programme	Place	Date	Post/ Assignment
1.	Livestock breeding and disease management	Olaiyur, Tiruchirappalli Dt.	28.06.2012	Coordinator
2.	Livestock breeding, disease prevention & management and value added dairy products	Thirumalaisamuthiram Tiruchirappalli Dt.	11.04.2014	Coordinator
3.	Livestock breeding, disease prevention & management and value added dairy products	Mullippatti, Tiruchirappalli Dt.	12.04.2014	Coordinator
4.	Advanced animal husbandary practices & service of natural insemination	Tiruvanaikovil, Tiruchirappalli Dt.	14.06.2014	Coordinator
5.	Advanced animal husbandary practices & service of natural insemination	Saveriyarpuram, Pudukkottai Dt.	21.06.2014	Coordinator
6.	Advanced animal husbandary practices & service of natural insemination	Mudhalaipatti, Karur Dt.	28.06.2014	Coordinator
7.	Livestock breeding, Disease prevention and Management	Rengachippatti, Karur Dt.	19.12.2015	Coordinator
8.	Advanced animal husbandary practices & service of natural insemination	Edumalai, Tiruchirappalli Dt.	08.10.2016	Coordinator
9.	Advanced animal husbandary practices & service of natural insemination	Rengachippatti, Karur Dt.	15.10.2016	Coordinator
10.	Advanced animal husbandary practices & service of natural insemination	Vellalappatti, Tiruchirappalli Dt.	04.03.2017	Coordinator
11.	Livestock breeding, Disease prevention	Purathakkkudi, Tiruchirappalli Dt.	04.06.2018	Coordinator

Recent Select Publications

1. M Srinivasan, M Adnane, **G Archunan**. Significance of cervico-vaginal microbes in bovine reproduction and pheromone production - A hypothetical review, *Res Vet Sci*. 2021, 135:66-71.
2. Manikkaraja C, Bhavika M, Singh R, Nagarathnam B, George G, Gulyani A, **Archunan G**, Sowdhamini R. Molecular and functional characterization of buffalo nasal epithelial odorant binding proteins and their structural insights by in silico and biochemical approaches. *Journal of biomolecular structure and dynamics*. 2020,24.
3. Manikkaraja C, Mahboob S, Al- Ghanim KA, Rajesh D, Selvaraj K, Sivakumar M, Al-Misned F, Ahmed Z, **Archunan G**. A novel method to detect bovine sex pheromones using l-tyrosine-capped silver nanoparticles: Special reference to nanosensor based estrus detection. *Journal of photochemistry and photobiology. B, Biology*. 2020, 203:111747.
4. Srinivasan M, Muthukumar S. Saibaba G, Manikkaraja C, Abdulkader Akbarsha, M. and **Archunan, G**. Salivary luteinizing hormone: An open window to detect oestrous period in buffalo. *Reproduction in domestic animals*. 2020, 55:647-651.
5. **Archunan G**. Reproductive enhancement in buffalo: looking at urinary pheromones and hormones. *Iran J Vet Res*. Summer. 2020,21(3):163-171.
6. Silambarasan V, Deepalakshmi G, Sankarganesh D, Nithya V, **Archunan G** (2019). Identification of potential pheromone source in sows. *Behav Processes*. 2019;22; 168:103940. DOI: 10.1016/j.beproc.2019.103940.
7. Kaleshkumar K, Rajaram R, Gayathri N, Sivasudha T, Arun G, **Archunan G**, Gulyás B, Padmanabhan P. Muscle extract of *Arothron immaculatus* regulates the blood glucose level and the antioxidant system in high-fat diet and streptozotocin induced diabetic rats. *Bioorg Chem*. 2019 90:103072
8. Mohamed Asik R, Gowdhami B, Mohamed Jaabir MS. **Archunan G**, Suganthy N. Anticancer potential of zinc oxide nanoparticles against cervical carcinoma cells synthesized via biogenic route using aqueous extract of *Gracilaria edulis*. *Mater Sci Eng C Mater Biol Appl*. 2019. 103:109840.
9. Srinivasan M, Dhanasekaran D, **Archunan G**. Vaginal microbiome analysis of buffalo (*Bubalus bubalis*) during estrous cycle using high-throughput amplicon sequence of 16S rRNA gene. *Symbiosis*. 2019. 78; 97-106.
10. Sankarganesh D, Ramachandran R, Suriyakalaa U, Saravanakumar VR, **Archunan G**, Akbarsha MA, Achiraman S. Assessment of urinary volatile compounds and proteins in the female goat *Capra hircus*: a pilot study to reveal potential indicators of estrus. *Reprod Domest Anim*. 2019. 54, 646-651. PubMed PMID: 30659685.
11. Muthukumar S, Rajesh D, Selvam RM, Saibaba G, Suvaithenamudhan S, Akbarsha MA, Padmanabhan P, Gulyas B, **Archunan G**. Buffalo nasal odorant-binding protein (bunOBP) and its structural evaluation with putative pheromones. *Sci Rep*. 2018; 8(1):9323. PubMed PMID: 29921930.
12. Rajamanickam R, Shanmugam A, Thangavel R, Devaraj S, Soundararajan K, Ponnirul P, Ramalingam R, Ganesan RV, Parasuraman P, **Govindaraju A**. Localization of $\alpha 2$ -globulin in the acinar cells of preputial gland, and confirmation of its binding with farnesol, a putative pheromone, in field rat (*Millardia meltda*). *PLoS One*. 2018; 13(6):e0197287. PubMed PMID: 29856754.
13. Muthukumar S, Muniasamy S, Srinivasan M, Ilangovan A, Satheshkumar S, Rajagopal T, Ramesh Saravana Kumar V, Sivakumar K, **Archunan G**. Evaluation of pheromone-

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