




ICAR-National Bureau of Fish Genetic Resources
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Name	Dr. T. Raja Swaminathan	
Designation	Principal Scientist and ICAR National Fellow	
Date of birth and years of professional experience	25.06.1972 21 years	
Qualification (PG and above)	M.V.Sc., Ph.D.,	
Current area of Research	Fish cell culture, Fish Disease Diagnosis, Surveillance of ornamental fish diseases	
Area of Research Expertise (in bullets not more than 10)	<ul style="list-style-type: none">• Bacteriology• Fish disease diagnosis• Development of Disease diagnostic kits• Fish Cell culture• Virology• Molecular diagnostics• Purification of fish immunoglobulin	
Awards/ Recognitions (only National and International)	<ol style="list-style-type: none">1. Competent authority of Indian Council of Agricultural Research appointed me as ICAR NATIONAL FELLOW on the recommendation of Search and Selection Committee wide F. No. Agri Edn. 27/2/2015-HRD dated 13.02.2017.2. Awarded a NAIP overseas fellowship to undergo 45 days NAIP training Programme on Stem cell research (Fisheries) at IPS core facility, University of Nantes, France, during 01 March to 15th April 2014 under NAIP.3. NBFGR Kochi Unit was awarded “Best Division Award” of ICAR-NBFGR for the year 2012-20134. Awarded “Best Research Team Award” of ICAR-NBFGR for the year 2014-2015	

5. Awarded “Best Research Scientist Award” of ICAR-NBFGR for the year 2015-2016
6. Awarded best paper in the Journal of aquatic animal health as a co author in recognition of the merit paper entitled”: The development and characterization of a cell culture system from India Mud crabs *Scylla serrata* by American Fisheries Society on 22nd September 2020

Publication (no.)

• Research papers	87
• Reviews	5
• Books	7
• Book Chapters	2
• Popular articles	3
• Others	10

Important Research Publications (max. 15)

1. Swaminathan T R., V. S. Basheer, A. Gopalakrishnan, Neeraj Sood and P. K. Pradhan. 2016. A new epithelial cell line, HBF from caudal fin of endangered yellow catfish, *Horabagrus brachysoma* (Gunther, 1864). Cytotechnology. 68:515–523. <https://doi.org/10.1007/s10616-014-9804-2>; Published 31 October 2014; Published by Springer
2. Sahoo P.K., T. Raja Swaminathan, Thangapalam Jawahar Abraham, Raj Kumar, S. Pattanayak, A. Mohapatra, S.S. Rath, Avijit Patra, Harresh Adikesavalu, Neeraj Sood, P. K. Pradhan, B.K. Das, P. Jayasankar and J.K. Jena. 2016. Detection of goldfish haematopoietic necrosis herpes virus (Cyprinid herpesvirus 2) with *Aeromonas hydrophila* infection in goldfish: First evidence of any viral disease outbreak in ornamental freshwater aquaculture farms of India. Acta Tropica 161, 8–17. <https://doi.org/10.1016/j.actatropica.2016.05.004>; Available online 9 May 2016; Published by Elsevier
3. Swaminathan T. R, Raj Kumar, Arathi Dharmaratnam, V. S. Basheer, Neeraj Sood, P. K. Pradhan, N. K. Sanil, P. Vijayagopal, and J. K. Jena. 2016. Emergence of carp edema virus (CEV) in cultured ornamental koi carp, *Cyprinus carpio* koi in India. Journal of general Virology 97(12):3392-3399. <https://doi.org/10.1099/jgv.0.000649>; Published: 16 December 2016; Published by Microbiology Society
4. Behera, B.K, P.K. Pradhan, T.R. Swaminathan, N. Sood, Prasenjit Paria, Abhishek Das, D.K. Verma, R. Kumar, M.K. Yadav, A.K. Dev, P.K. Parida, B.K. Das, K.K. Lal, J.K. Jena. 2018. Emergence of Tilapia Lake Virus associated with mortalities of farmed Nile Tilapia *Oreochromis niloticus* (Linnaeus 1758) in India. Aquaculture 484, 168–174. <https://doi.org/10.1016/j.aquaculture.2017.11.025>; Available online 13 November 2017; Published by Science Direct
5. Swaminathan T. R., Charan Ravi, Raj Kumar, Arathi Dharmaratnam, Basheer Valaparambil

- Saidmuhammed, Pravata Kumar Pradhan, Neeraj Sood. 2018. Derivation of two tilapia (*Oreochromis niloticus*) cell lines for efficient propagation of Tilapia Lake Virus (TiLV). *Aquaculture* 492, 206–214. <https://doi.org/10.1016/j.aquaculture.2018.04.012>; Available online 10 April 2018; Published by Science Direct
6. Preena, P. G., Arathi, D., Sundar Raj, N., Arun Kumar, T. V., Arun Raja, S. and Swaminathan, T. R. 2019. Antibiotic susceptibility pattern of bacteria isolated from freshwater ornamental fish, guppy showing bacterial disease, *Biologia* 74(8),1055–1062. <https://doi.org/10.2478/s11756-019-00261-8>; Published 30 April 2019; Published by Springer
 7. Sundar Raj, N., T. Raja Swaminathan, Arathi Dharmaratnam, S. Arun Raja, D. Ramraj, K.K. Lal. 2019. *Aeromonas veronii* caused bilateral exophthalmia and mass mortality in cultured Nile tilapia, *Oreochromis niloticus* (L.) in India. *Aquaculture* 512, <https://doi.org/10.1016/j.aquaculture.2019.734278>; Available online 4 July 2019
 8. Sivakumar, S., T. Raja Swaminathan and Raj Kumar Kalaimani, N. 2019. The Development and Characterization of a Cell Culture System from Indian Mud Crabs *Scylla serrata*. *Journal of Aquatic Animal Health*. <https://doi.org/10.1002/aah.10073>; First published: 22 August 2019; Published by American Fisheries Society
 9. T. Raja Swaminathan, Arathi Dharmaratnam, S. Arun Raja, Sundar Raj, and Kuldeep Kumar Lal. 2020. Establishment and cryopreservation of a cell line derived from caudal fin of endangered catfish *Clarias dussumieri* Valenciennes, 1840. *Journal of Fish Biology*, DOI: 10.1111/jfb.14265. 96(3) 722-730. First published:27 January 2020; Published by Wiley Online Library
 10. Dharmaratnam A, Kumar R, Valaparambil BS, Sood N, Pradhan PK, Das S, Swaminathan TR. 2020. Establishment and characterization of fantail goldfish fin (FtGF) cell line from goldfish, *Carassius auratus* for in vitro propagation of Cyprinid herpes virus-2 (CyHV-2). *PeerJ* 8: e9373 DOI 10.7717/peerj.9373. Published 14 July 2020; Published by PeerJ.
 11. Swaminathan, T. R., Sundar Raj Nithianantham, Arathi Dharmaratnam, Raj Kumar, Pravata Kumar Pradhan, Sumithra Thangalazhy Gopakumar and Neeraj Sood. 2021. Cyprinid herpes virus - 2 (CyHV-2): a comprehensive review. *Reviews in Aquaculture*. 13(2): 796-821. 14 September 2020. <https://doi.org/10.1111/raq.12499>. (Published 14 September 2020); Published by Wiley Online Library.
 12. Swaminathan, T. R., Arun Raja, Arathi Dharmaratnam, Sundar Raj Nithianantham. 2021. Comparative sensitivity of three new cell lines developed from gill, liver and brain tissues of goldfish, *Carassius auratus* (L.) to cyprinid herpesvirus-2 (CyHV-2). *Journal of Virological Methods*, 291, 114069. <https://doi.org/10.1016/j.jviromet.2021.114069>; Available online 5 February 2021; Published by Science Direct
 13. Swaminathan, T. R., Narendrakumar Lekshmi, Prasanna Geetha Preena, Shanmuganathan Arun Raja, Dharmaratnam Arathi, and Nithianantham Sundar Raj. Comprehensive update on inventory of finfish cell lines developed during the last decade (2010-2020). *Reviews in Aquaculture*. DOI: 10.1111/raq.12566; First published: 30 April 2021; Published by Wiley Online Library.
 14. Arathi Dharmaratnam, Arun Sudhagar, Sundar Raj Nithianantham, Sweta Das, Thangaraj Raja Swaminathan. 2021. Evaluation of candidate reference genes for quantitative RTqPCR analysis in goldfish (*Carassius auratus* L.) in healthy and CyHV-2 infected fish. *Veterinary*

Immunology and Immunopathology, 237, 110270
<https://doi.org/10.1016/j.vetimm.2021.110270>; Available online 15 May 2021; Published by Elsevier.

15. Das, S., Dharmaratnam, A., Ravi, C. Swaminathan T.R. 2021. Immune gene expression in cyprinid herpesvirus-2 (CyHV-2)–sensitized peripheral blood leukocytes (PBLs) co-cultured with CyHV-2-infected goldfish fin cell line. *Aquaculture International*.
<https://doi.org/10.1007/s10499-021-00721-6>