

Dr. M. Ravi PhD, MNASc

Professor

- Area of Research Expertise: Immunology, monoclonal and polyclonal antibodies, animal cell cultures, 3D cell cultures of human cancer cell lines, cancer protein biomarker discovery.
- Received the “Certificate for Meritorious Publications” at the University level for three years.
- Received the Shri. R. Dakshinamurthy and Shrimathi. Adhilakshmiammal Best Research Publication Gold Medal in the Biomedical Sciences, Technology & Research, SRU in the year 2015.
- Membership in Committees: Member of the National Academy of Sciences
Chief Editor: LifeSciences Research
- List of Publications: Books: 6; Journal Publications: 43; Editorials: 9

Organizing member of the INPIRE Science Camp for Higher Secondary School Students sponsored by Department of Science and Technology, Government of India at Sri Ramachandra University, 2016.

PATENT: A Method to Detect Protein Expression Changes on Erythrocytes; patent application number 201741032874 dated 16/09/2017.

Journal Publications: 65

1. **Maddaly Ravi**, Kauser S Begum, Aswathy S Lal and Sraddha S Bharadwaj. 2019. The Biochemical Mediators and Mechanisms Involved in Chromatin Conformational Remodeling Through the Cell Cycle. *Critical Reviews in Eukaryotic Gene Expression*. 29(5):425 – 435.
2. **Ravi M**, Sneka MK and Joshipura A. (2019). The culture conditions and outputs from breast cancer cell line in vitro experiments. *Exp Cell Res*. Aug 6:111548. doi: 10.1016/j.yexcr.2019.111548.
3. **Maddaly Ravi**, SrishtiRamanathan and Krupa Krishna. (2019). Factors, mechanisms and implications of chromatin condensation and chromosomal structural maintenance through the cell cycle. *Journal of cellular physiology*. DOI: 10.1002/jcp.29038 [IF: 4.522 (2019)]
4. Aswathy S. Lal, S Kauser Begum, Sraddha S Bharadwaj, Lalitha V, Vijayalakshmi J, Solomon F. D. Paul and **Maddaly Ravi**. 2019. Bleomycin-induced genotoxicity *in vitro* in human peripheral blood lymphocytes evidenced as complex chromosome- and chromatid-type aberrations. *Toxicology in vitro*. 54: 367–374

5. **Maddaly Ravi** and AishwaryaSubramaniyan. 2018. Obtaining 3D and 3D revert cultures of BMG-1 cell line for the analysis of cytokine expression differences. *Current Science*. 115(5): 936-938
6. **Ravi M**, Lal AS, Begum SK. 2018. Prophasing interphase chromatin for assessing genetic damages-The evolution, applications and the future prospects. *Mutat Res*.810: 19-32. doi: 10.1016/j.mrfmmm.2018.06.001.
7. Subramaniyan A, **Ravi M**. 2017, Cytokine Profiling of MCF-7 Cell Line 2D, Progressive 3D and 3D Revert cultures. *J Cell Biochem*.233:2768–2772.doi: 10.1002/jcb.26349. PMID:28815719
8. AishwaryaSubramaniyan and **Maddaly Ravi**. 2017. Agarose Hydrogel Induced MCF-7 and BMG-1 Cell Line Progressive 3D and 3D Revert Cultures. *J Cell Physiol*. 2017 Apr 19. doi: 10.1002/jcp.25965. [Epub ahead of print] IF: 4.155
9. **Maddaly Ravi**,AishwaryaSubramaniyan and HariniBalasubramanian, 2017, Cancer cytokines and the relevance of 3D cultures for studying those implicated in human cancers. *J Cell Biochem*.118(9) 2544–2558.doi: 10.1002/jcb.25970. IF: 3.446
10. Thangavelu, M., Godla, U. R., Sudhakar, G., Paul, S., and **Ravi, M**. 2017. A case control comparative hospital-based study on the clinical, biochemical, hormonal, and gynecological parameters in Polycystic Ovarian Syndrome. *Indian J. Pharm. Sci –* 79(4):608-616
11. **Maddaly Ravi**, Divya K Mohan and Bellona Sahu, 2016, Protein Expression Differences of 2-Dimensional and progressive 3-Dimensional cell cultures of non-small-cell-lung-cancer cell line H460, *J Cell Biochem*. Nov 18. doi: 10.1002/jcb.25800 IF: 3.446
12. **Maddaly Ravi**, Aarthi Ramesh and AishwaryaPattabhi, 2016, Contributions of 3D cell cultures for cancer research, *Journal of Cellular Physiology*, 232(10):2679–2697 DOI: 10.1002/jcp.25603. IF: 4.155
13. Thangavelu, M., Godla, U. R., Paul, S., and **Ravi, M**. 2017. Single nucleotide polymorphisms of *INS*, *INSR*, *IRS1*, *IRS2*, *PPAR-G* and *CAPN10* genes in the pathogenesis of polycystic ovary syndrome. *J. Genet*. 96, DOI 10.1007/s12041-017-0749-z.
14. **Maddaly Ravi**. 2017, Applications of 3D cell cultures in the early stages of drug discovery focusing on gene expressions, drug metabolism and susceptibility, *Crit Rev Eukaryot Gene Expr*. 27(1):53–62 IF: 1.571
15. **Maddaly Ravi**, Aarthi Ramesh and AishwaryaPattabhi. 2017. Human Brain Malignant Glioma (BMG-1) 3D Aggregate Morphology and Screening for Cytotoxicity and Anti-Proliferative Effects, *Journal of Cellular Physiology*, 232(4):685–690. DOI: 10.1002/jcp.25603. IF: 4.155
16. Thangavelu, M., Swaminathan, R., Krishnan, V., Godla, U. R., Sudhakar, G., and **Maddaly, R**. 2016. Polycystic Ovary Syndrome: Causes and Contributions. *IJCMAS*, 11(3), 159–166.
17. AnuradhaElamparithi, **Maddaly Ravi**, C.Balachandran, Suresh Rao and Solomon FD Paul. 2016. Biocompatibility Evaluation of Electrospun Collagen, Gelatin, Polycaprolactone and their Composite Matrices in *RattusNorvegicus*. *Indian Vet. J.*, December 2016, 93 (12): 49 – 51.
18. Aarthi Ramesh and **Maddaly Ravi**. 2016. Select Genes for Expression Analysis in 3D Cultures of A549, BMG-1, MCF-7 and SiHa Cell Lines, *Life Science Research*, 01(04):17-20.

19. Kaviya SR and **Maddaly Ravi**. 2016. Comparison of Cell Culture Phases of A549 Cells as 2D And 3D Cultures – A Data Set, *Life Science Research* 01(03):16-17.
20. AishwaryaPattabhi, Aarthi Ramesh and **Maddaly Ravi**. 2016. Technologies Used to Study Cancer Cell Lines - Both *in vitro* and *in vivo* Approaches. *Life Science Research* 01(02): 19-25.
21. Aarthi Ramesh, AishwaryaPattabhi and **Maddaly Ravi**. 2016. Assays Used *in vitro* to Study Cancer Cell Lines, *Life Science Research*, 01(01): 19-24.
22. **Maddaly Ravi**, S. R. Kaviya and V. Paramesh. 2016. Culture phases, cytotoxicity and protein expressions of agarose hydrogel induced Sp2/0, A549, MCF-7 cell line 3D cultures. *Cytotechnology* (DOI 10.1007/s10616-014-9795-z) 68:429–441.
23. Ravi. M and Solomon F. D. Paul. A Rapid Biodosimetric Technique at the Human GlycophorinA locus. *Int Jour Hum Genet* 2(4): 251-254 (2002)
24. Ravi M., Solomon F.D. Paul and P. Venkatachalam (2002) A Humoral Immune Index of Clinically Normal Human Subjects. *Int. J. Hum. Genet*, 2: 185-186
25. Ravi M., N Venkateswaran, Solomon F.D. Paul, V. Abraham and P. Venkatachalam (2002) In Vitro Immunogenetic Effects of 532nm short YAG Laser Pulses on Human Lymphocytes. *Int. J. Hum. Genet*. 2: 15-18
26. Ravi.M., Solomon F.D.Paul.,Vikram.J (2003) A rapid biodosimetrictechnique,The RS-1 assay.*Rad. Protec. And Env.*,26:319-323.
27. Ravi M., Solomon F.D Paul, Krishnan M., Vijayalakshmi K., VettriSelvi V. and Vikram R Jayanth (2004) Glycophorin - A mutations as a window to study carcinogenesis. *Int. J. Hum Genet*. 4: 51-54
28. Ravi M., Solomon F.D. Paul, Panicker V.K. and Vikram R. Jayanth (2005) Glycophorin A Allelic distribution frequency in South Indian Population. *Anthropologist* 7: 257-259.
29. Maddaly Ravi et al. Polyclonal antibody-mediated mitotic inhibition in Chinese hamster ovary cells (CHO). *J Can Res and Ther*2 (3): 126-128 (2006)
30. Maddaly Ravi et al. Evaluating homogeny of cellular mitotic cytosolic protein antigens of chinese hamster ovary (CHO), HeLa, vero and human lymphocytes. *Intl J Cancer Res* 2(4):420-423(2006).
31. Maddaly Ravi et al. Optimizing premature chromosome condensation (PCC) of human lymphocytes by somatic cell hybridization to study primary DNA damages.*Int J Hum Genet* 7(4):319-323 (2007).
32. Ravi M., Parvathi D.V., Govind P.M., Preetha B., Ghosh S., and Solomon F.D. Paul (2007) Labelling transformed mitotic cells with fluorescent antibody conjugate. *Sri Ramachandra Journal of Medicine* 1: 16-19.

33. Maddaly Ravi et al. Hybridoma Generation by *In Vitro* Immunization of Murine Splenocytes with Cytosolic Proteins of Chinese Hamster Ovary (CHO) Mitotic Cells. *Hybridoma* 26(5): 311-315. (2007).
34. Ravi M. and Solomon F.D. Paul (2007) Comparison of two techniques that detect variant erythrocytes at the human Glycophorin-A locus for biosimetry. *Indian J. Rad. Res* 4 : 57-62.
35. Screening, Stabilization and Expansion of Secretory Hybridomas in Culture as a Steady Source of Monoclonal Antibodies (Mabs). (2007) Maddaly Ravi, SukanyaShyamaSundar, Kaavya Krishna Kumar, DeepaParvathi. V, Solomon F.D. Paul Vol. 1 Issue 2 32-38.
36. Sukanya. S., P. Govind, B. Preetha, K. Kavya, S.F.D. Paul and M. Ravi, 2008. Characterization of two monoclonal antibodies 10f3 and 15e5 directed against mitotic cytosolic proteins of Chinese hamster ovary (CHO) cells. *Adv. Biotech.*, 12: 32-35.
37. Maddaly Ravi et al. Human interphase lymphocyte DNA condensation employing mitotic extracts. *Sri Ramachandra Journal of Medicine* 2 (II) 5-8 (2009).
38. Ravi Maddaly et al. Immunizations of human lymphocytes *in vitro* with a T-dependent antigen towards human monoclonal antibody production. *Human Antibodies* 18 (3) 101-107 (2009).
39. Maddaly Ravi et al. Generation of Monoclonal Antibodies to Cell Surface Proteins of Human Multiple Myeloma. *Hybridoma* 28 (5) 369-371 (2009).
40. Maddaly Ravi et al. Generation of monoclonal antibodies to mitotic and interphase cytosolic proteins of Chinese Hamster Ovary (CHO) cells. *Human Antibodies* 18 (4) 139-143 (2009).
41. Ravi Maddaly et al. Receptors and signaling mechanisms for B-lymphocyte activation, proliferation and differentiation – insights from both *in vivo* and *in vitro* approaches. *FEBS Letters* 584 (24) 4883–4894 (2010). **IF: 3.519**
42. M Ravi, Syed A, Sai LD and Solomon FD Paul (2010), The beneficial effects of spirulina focusing on its immunomodulatory and antioxidant properties, *Nutrition and Dietary Supplements*, 2, 73-83.
43. Ravi M. (2010), Preparing a Research Proposal for Funding in Science and Technology, *Advanced Biotech*, 8, 12-13.
44. Ravi M. (2010), Literature Review for Research Projects in Science and Technology, *Advanced Biotech*, 9, 8-9.

45. Ravi M. (2010), Research Ethics in Science and Technology, *Advanced Biotech*, 10, 7-9.
46. Ravi M. , Allan , Anirudh S, Bhavani M, Deepika R, Bhavna S, Ginila R, Joseph V, Madhumitha H, Priyanka A, Priyanka V, Ramya R, Shruthilaya M, Shruti D, Soumya T, Walter J (2010), Optimizing 3D Aggregate Culture Conditions for HEp-2 and A549 Cell Types — A Tool for Novel Antigen Discovery and Other Applications, *Advanced Biotech*, 10,
47. Ravi M., Shruti Balaji and Lakshmi Srinivasan (2010), Activation and Differentiation of Human Circulatory Membrane IgG Positive B-lymphocytes into Secretory Plasma Cells by Bound ConcanavalinA in vitro, *Sri Ramachandra J Medicine*, 3, 1-4.
48. M. Ravi, Madhumitha Haridoss and Sai Keerthana. W. Cancer Biomarkers – Discovery to Applications. *Adv. BioTech* 10(11): 29-38 (2011).
49. Maddaly Ravi, Sai Keerthana W, Madhumitha Haridoss, Shwetha Raghunathan and Sowmya Thanikachalam. Easy data template, analysis and presentation tools for complex multiparametric animal cell culture studies. *Journal of Medical and Biological Sciences*, 4 (1): 1-6. (2011).
50. Maddaly Ravi, Balaji Shruti and Haridoss Madhumitha. Discovery Tools for Solid Tumor Research. *Journal of Solid Tumors*, 2 (1): 34-42. (2012).
51. H. Madhumitha, W. Sai Keerthana and M. Ravi., Enhancing gene expression in non small cell lung cancer cell line NCI H23 by 3D aggregate formation as evidenced by protein profiling. *Sri Ramachandra Journal of Medicine*. 4: 15-19 (2011).
52. Maddaly Ravi, Nivedita K and Aswini K. An improved method for rapid analysis of primary DNA damages by premature chromosome condensation. *Adv Bio Tech*, 11 (10): 07-09 (2012)
53. Maddaly Ravi, K. Nivedita and Govind M. Pai. Chromatin condensation dynamics and implications of induced premature chromosome condensation *Biochimie*, 94: 124-133 (2013) **IF: 2.963**
54. Maddaly Ravi, Sunil Sah, and Rajesh Bhammar. ‘Differences of SiHa (Human Cancer of Cervix) and BMG-1 (Brain Glioma) Cell Lines as 2D and 3D Cultures’. *Journal of Cellular Physiology*, 229: 127–131 (2014). **IF: 4.155**
55. Maddaly Ravi, S. R. Kaviya and V. Paramesh. “Culture phases, cytotoxicity and protein expressions of agarose hydrogel induced Sp2/0, A549, MCF-7 cell line 3D cultures”. *Cytotechnology* (DOI 10.1007/s10616-014-9795-z) (2014). **IF: 1.864**

56. Maddaly Ravi, Paramesh V, Kaviya SR, Anuradha E and Solomon F D Paul. 3D Cell Culture Systems - Advantages and Applications. *Journal of Cellular Physiology*,230: 16–26, (2014). **IF: 4.155**
57. Elamparithi A, Punnoose AM, Kuruvilla S, Ravi M, Rao S, Paul SF. Electrospunpolycaprolactone matrices with tensile properties suitable for soft tissue engineering. *Artif Cells NanomedBiotechnol.*2015 Jan 24:1-7. [Epub ahead of print] **IF: 2.024**
58. Maddaly Ravi, Bellona Sahu and Divya Mohan. Genes Associated with Human Cancers, Their Expressions, Features, Functions and Significance. *Crit Rev Eukaryot Gene Expr*, 25(3):209–238 (2015). **IF: 1.571**
59. Divya K Mohan, Bellona Sahu and M. Ravi. Understanding Cancer Gene Expression and Regulation Using 3Dimensional Cell Cultures – Building A Hypothesis. *The Scitech Journal* 02(10): 27-33 (2015).
60. Aarthi Ramesh, Aishwarya Pattabhi and Maddaly Ravi. 2016., Assays Used *in vitro* to Study Cancer Cell Lines, *Life Science Research*, 01(01): 19-24.
61. Aishwarya Pattabhi, Aarthi Ramesh and Maddaly Ravi. 2016., Technologies Used to Study Cancer Cell Lines - Both *in vitro* and *in vivo* Approaches. *Life Science Research* 01(02): 19-25.
62. Kaviya SR and Maddaly Ravi,2016, Comparison of Cell Culture Phases of A549 Cells as 2D And 3D Cultures – A Data Set, *Life Science Research* 01(03):16-17.
63. Aarthi Ramesh and Maddaly Ravi, 2016, Select Genes for Expression Analysis in 3D Cultures of A549, BMG-1, MCF-7 and SiHa Cell Lines, *Life Science Research*, 01(04):17-20.
64. Maddaly Ravi, Aarthi Ramesh and Aishwarya Pattabhi, 2016, Human Brain Malignant Glioma (BMG-1) 3D Aggregate Morphology and Screening for Cytotoxicity and Anti-Proliferative Effects, *Journal of Cellular Physiology*, DOI: 10.1002/jcp.25603. **IF: 4.155**
65. Maddaly Ravi, 2016, Applications of 3D cell cultures in the early stages of drug discovery focusing on gene expressions, drug metabolism and susceptibility, *Crit Rev Eukaryot Gene Expr*. **IF: 1.571**

Books: 6

<u>Book 1:</u> A Practical Manual for Basic Immunotechniques	Samanthi Publications, India. ISBN: 978-81-906565-0-4 ; Hard Bound
<u>Book 2:</u> Animal Cell Culture	Samanthi Publications, India. ISBN: 978-81-906565-1-1; Soft Bound
<u>Book 3:</u> Aggregates of cell lines on agarose hydrogels	Lambert Academic Publications, Germany. ISBN: 978-3-8473-0755-6; Soft Bound
<u>Book 4:</u> Ready Reckoner - Immunology	Samanthi Publications, India. ISBN: 978-81-906565-3-5 ; Soft Bound
<u>Book 5:</u> Anti mitotic polyclonal antibodies for mitotic inhibition	Lambert Academic Publications, Germany. ISBN: 978-3-8484-2550-1; Soft Bound
<u>Book 6:</u> MCQs series for Life Sciences, Volume 1: Immunology, Biochemistry, Cell Biology, Developmental Biology, Genetics and Molecular Biology.	Bentham Science Publishers ISSN: 2352-8745 eISBN: 978-1-60805-944-7 ISBN: 978-1-60805-945-4

Editorials: 9

1. Maddaly Ravi: *Data Representation for Manuscripts in Science and Technology - Editorial in The Scitech June 2014.*
2. Maddaly Ravi: *Publication Ethics - Editorial in The Scitech - May 2014.*
3. Maddaly Ravi: *Preparing A Research Proposal for Funding in Science and Technology - Editorial in The Scitech - April 2014.*
4. Maddaly Ravi: *Publishing a Paper - Editorial in The Scitech March 2014.*
5. Maddaly Ravi: *Literature Review for Research Projects in Science and Technology - Editorial in The Scitech; February 2014.*

6. Maddaly Ravi: *Standard Operating Procedures (SOPs) and Good laboratory Practices (GLPs) for Cell Culture Facilities*.
7. Maheswari T and Maddaly Ravi, Next Generation Sequencing – Technical Report *Life Science Research*, 01(06):15-17.
8. Maheswari T and Maddaly Ravi, 2016, DNA Microarray Technology – Applications, *Life Science Research*, 01(07):14-16.
9. Maheshwari T and Maddaly Ravi, 2016, qPCR, the Variants and Their Applications – An Update, *Life Science Research*, 01(08): 17-21.

Recent conference presentations:

1. **M.Ravi.** 3D cultures of cancer cell lines. Plenary/Inaugural lecture. Sathyabama University, February 2017.
2. **M.Ravi.** 3D cell cultures – The promises they hold. Invited lecture; Dr. ALM Post Graduate Institute of Basic Medical Sciences, University of Madras, Chennai. March 2017.
3. **M.Ravi.** Applications and Advantages of 3D cell cultures. Invited lecture. Drug Discovery India, Selectbio; Bengaluru. September 2017.
4. AasthaJoshiPura, Sangeetha D, Kaviyasneka Mand **M. Ravi.** 2019. The morphological features of six different cancer cell lines as 3-Dimensional aggregates obtained using agarose hydrogels as the matrix. National conference on 'Biochemistry and Therapeutics of Diabetes and Cancer – Treatment and Challenges', February 28th and March 1st 2019. Loyola College, Chennai, India.