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| **TO MAGNIFICO RETTORE OF UNIVERSITA’ DEGLI STUDI DI MILANO ID CODE 4803** |
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| I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Department of Health Science**  **S**cientist- in – charge:  **Prof. Dr. Giulia Marchetti** |
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**Ilamathi Thirusenthilarasan**

**CURRICULUM VITAE**

PERSONAL INFORMATION

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| Surname | Thirusenthilarasan (M) |
| Name | Ilamathi |
| Date of birth | 09/05/1985 |

PRESENT OCCUPATION

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| Appointment | Structure |
| Project Manager | Be well laboratories and Life Sciences, Chennai, India  INR 600000 per annum |

EDUCATION AND TRAINING

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| Degree | Course of studies | University | year of achievement of the degree |
| B.Tech | Industrial Biotechnology | Anna University, India | 2002 |
| M.S (By Research) | Biotechnology | VIT Univrsity | 2009 |
| Ph.D` | Biotechnology | SASTRA University | 2017 |

REGISTRATION IN PROFESSIONAL ASSOCIATIONS – NA

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| Date of registration | Association | City |
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FOREIGN LANGUAGES

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| Languages | level of knowledge |
| English | Fluent (IELTS 7 band score) |

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

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| Year | Description of award |
| 2018 | Scientific Excellence (Junior Category) awarded by Biozone Research Technologies Pvt. Ltd, Chennai |
| 2013-2015 | Junior Research fellowship – DST-SERB |
| 2015 -2016 | Senior Research fellowship – DST-SERB |

RESEARCH ACTIVITY

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| DOCTORAL RESEARCH:  Title: Multifaceted role of trioxane derivative against hepatocellular carcinoma : in silico, in vitro and in vivo perspectives  Duration: Four years  Summary: Hepatocellular carcinoma (HCC) is one of the frequently diagnosed malignant neoplasms of liver and is the third-most frequent cause of cancer mortality worldwide. Many reports affirm the phosphorylation of STAT3 in HCC with relevance to IL-6 mediated JAK/STAT pathway. This creates an urge to identify a novel agent which will inhibit STAT3 and thereby abrogate HCC. To confirm our hypothesis, we chose six Trioxane (Tx) derivatives (Artemisinin, Artemether, Artesunate (ATS), Dihydroartemisin, Parthenolide and Thapsigargin) and evaluated their STAT3 inhibitory potential.  A preliminary comparative study among the six Tx derivatives in comparison to S3I-201 (standard STAT3 inhibitor) were carried out using a uni􀁊ed computational approach to identify the best potential inhibitor (Tx) of activated STAT3. From the computational analysis, ATS was selected as the best inhibitor of STAT3 among the six Tx derivatives.  In vitro studies were carried out in liver cancer cell lines (HepG2, Huh7 and PLC/PR5 cells) to con􀁊rm experimentally the role of STAT3 inhibition by ATS (IC50-20 μM). ATS was found to interfere with STAT3 dimerization and STAT3-DNA binding activity. The protein expression analysis showed ATS down-regulated activated STAT3 expression in a dose and time dependent manner. We also analysed the role of ATS in sensitizing HepG2 cells towards TRAIL mediated apoptosis. It was also compared with the standard drug - Oxaliplatin (OXP). ATS sensitized HepG2 cells towards TRAIL effectively by up-regulating the expression of DR4. This was due to the inhibition of STAT3 activation and prevention of its nuclear translocation by ATS thereby favouring apoptosis.  The ef􀁊cacy of ATS to abrogate HCC was studied in vivo in an experimental NDEA mediated hepatocarcinogenesis model (in male Wistar rats). Morphological appearances of rat liver; enzymatic and non-enzymatic parameters; histopathological analysis and molecular level expression analysis of STAT3 dependent proteins were studied extensively. ATS was found to favourably induce apoptosis and also enhanced the expression of SOCS3, thus controlling proliferation of cancer cells. ATS successfully modulated the expression of the JAK/STAT pathway signalling molecules via a feedback loop inhibition mechanism. Our results overwhelmingly confirmed the therapeutic and inhibitory potential of ATS against STAT3 thereby resulting in abrogation of HCC. |

PROJECT ACTIVITY

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| Year | Project |
| 2006- 2009 | M.S (RESEARCH) PROJECT:  Title: Study of chromium stress on Escherichia coli and Saccharomyces cerevisiae.  Duration: Three years  Summary: Isolated Escherichia coli strain from effluent and its tolerance to chromium was compared with lab strain. Growth patterns of the organism (Escherichia coli and Saccharomyces cerevisiae) in different concentrations of chromium were studied. The total chromium uptake was determined by Flame Atomic Absorption Spectroscopy and the reduction of Cr (VI) to Cr(III) was analysed using a colorometric method with 1,5- Diphenyl carbazide. The protein expressions were also studied. |
| 2002 | Biochemical and Molecular characterisation of plant growth promoting rhizobacteria -Gluconacetobacter diazotrophicus pal5  Glucanacetobacter diazotrophicus was isolated from soil to study its use as a biocontrol agent against Colletotrichum falcantum causing red rot, a deadly disease in sugarcane. Nitrogen fixing ability, IAA production, heavy metals’ solubilisation and antagonistic activity were characterized. |

PUBLICATIONS

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| 1. M. Ilamathi, V. Sivaramakrishnan, Artesunate acts as fuel to 􀁉re in sensitizing HepG2 cells towards TRAIL mediated apoptosis via STAT3 inhibition and DR4 augmentation. Biomed Pharmacother. (2017) doi:  10.1016/j.biopha.2017.01.086. |
| 2. M. Ilamathi, P.C. Prabu, K.A. Ayyappa, V. Sivaramakrishnan, Artesunate obliterates experimental hepatocellular carcinoma in rats through suppression of IL-6-JAK-STAT signalling, Biomed. Pharmacothe 82 (2016) 72– 79. doi:10.1016/j.biopha.2016.04.061. |
| 3. M. Ilamathi, S. Santhosh, V. Sivaramakrishnan, Artesunate as an anti-cancer agent targets STAT-3 and favorably suppresses hepatocellular carcinoma., C Top. Med. Chem. 16 (2016). |
| 4. V Sivaramakrishnan, M. Ilamathi, KS. Girish, K. Kemparaju, KS. Rangappa, B.L. Dhananjaya, Viper venom hyaluronidase and its potential inhibitor analysis: a multipronged computational investigation, J. Biomol. Struct. Dyn. (2016) |
| 5. V. Sivaramakrishnan, M. Ilamathi, K.S. Ghosh, S. Sathish, T. V Gowda, B.S. Vishwanath, K.S. Rangappa, B.L. Dhananjaya, Virtual analysis of structurally diverse synthetic analogs as inhibitors of snake venom secretory phospholipase A2., J. Mol. Recognit. 29 (2016) 22–32 |
| 6. M. Ilamathi, R. Hemanth, S. Nishanth, V. Sivaramakrishnan, Identi􀁉cation of potential transmembrane protease serine 4 inhibitors as anti-cancer agents by integrated computational approac, J. Theor. Biol. 389 (2016) 253–62. |
| 7. M. Ilamathi, S. Senthilkumar, P.C. Prabu, S. Panchapakesan, V. Sivaramakrishnan, Formylchromone exhibits salubrious e􀁍ects against nitrosodiethylamine mediated early hepatocellular carcinogenesis in rats, Che Biol. Interact. 219 (2014) 175–183. |
| 8. A.S.Y. Arafat, A. Arun, M. Ilamathi, J. Asha, P.R. Sivashankari, C.J.M. D’Souza, V. Sivaramakrishnan, B.L. Dhananjaya, Homology modeling, molecular dynamics and atomic level interaction study of snake venom 5’ nucleotidase., J. Mol. Model. 20 (2014) 2156. |
| 9. Mahalakshmi, M. Ilamathi, R. Siva, T.. Sridharan, E􀁍ect of nickel stress on Escherichia coli and Saccharomyces cerevisiae, Jr. Ind. Pollut. Control. 26 (2010) 5–13. |
| 10. M. Ilamathi, T. Mahalakshmi, T.. Sridharan, E􀁍ect of chromium on Microbial growth, Asian Microbiol. Biotechnol. Environ. Sci. 10 (2008) 759–764. |

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| Congress proceedings |
| Poster presentation in "Artesunate acts as fuel to fire in sensitizing liver cancer cells towards TRAIL mediated apoptosis via STAT-3 inhibition and DR4 augmentation " in the 2nd International conference on Structural and Functional Genomics (August 19-20, 2016), held at SASTRA University, India |
| Oral presentation in “Homology modeling, molecular docking and molecular level analysis of trioxanes as STAT3 inhibitors against HCC” in International conference on crystal growth and bimolecular crystallography (Nov 28-29,2014), organized by SASTRA University, India |
| Poster in “Study on tolerance of E.coli and Saccharomyces cereviceae to hexavalent chromium “in International Conference on Biotechnology conducted in VIT university (Feb 06-08, 2008), Vellore, India. |
| Oral presentation in “Bioleaching” in Bioexplore a national level seminar held on (Feb 2005) at Vivekananda College of Engineering, Trichengode, India. |
| Poster in “Phytochemicals” in Biorevolution a national symposium conducted (Sep 2004) at Kongunadu College of Arts and Science, Coimbatore, India. |

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| PARTICIPATION IN CONFERENCE/WORKSHOP: |
| Participated in the International conference in Angiogenesis:Technology and Therapeutics' held at SASTRA University, during 23-25 September, 2015 |
| Participated in the 'Schrodinger Workshop on Computational Drug Design' held at SASTRA University, during 27-28 March, 2015. |
| Attended workshop on “Molecular biological tools and techniques” at A.V.C. College (Autonomous), Manampandal on 29.01.2011. |
| Participated in a workshop on “Effective teaching methods” conducted by IQAC, A.V.C. college, from 02.09.2010 to 07.09.2010 |
| In Fujio Cup Quiz and a conference on “Stem cells and regenerative Medicine” conducted by NCRM on 27th Oct 2007. |
| In “ International Symposium on Chromosomes to Genome” conducted by Centre for Cellular and Molecular Biology, Hyderabad on July 3-5, 2007 |
| In the national seminar on “Intellectual property rights” on 20 & 21 Jan 2006 at Periyar College of Pharmaceutical Sciences,Trichy |
| In the Workshop on “Techniques in Microbiology, Biochemistry, and Molecular biology” organized from 7th to 13th of Jun 2004 at SNMV College of Arts and Science, Coimbatore. |

OTHER INFORMATION

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| Computer knowledge: C, C++ languages, MS Office |

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: Chennai, 07.12.2020

SIGNATURE

