CURRICULUM VITAE

PRASEETHA PRABHAKARAN

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PERSONAL PARTICULARS

Nationality	: Malaysian	Marital Status	: Married
NRIC No.	: 850625085456	Gender	: Female
Age	: 30	Date of Birth	: 25th June 1985

CAREER OBJECTIVE

- To be highly responsible and fully committed in all required safety aspects of laboratory and working procedure.
- To effectively contribute to the community and country thus becoming a productive scientist.

FIELD OF EXPERTISE

- Cancer biology (breast and ovarian cancers)

EDUCATION

UNDERGRADUATE STUDIES

University Technology, Malaysia (UTM)
Bachelors Degree in Science (July 2005 - May 2008)
Majoring: Biology
CGPA: 3.23 / 4.00 (2^{nd} Class Upper Hons)

ACADEMIC PROJECT

Final Year Research Project: The Project is on the Optimization of Exopolymeric Substance (EPS) Production of an unknown marine bacteria**.** In this project, the fermentation process is the most crucial task and skill needed in order to run other analyses simultaneously such as E24 which is to examine the activity of the EPS produced as well as the bioemulsifier production. The bioemulsifier can be used in the oil degradation process as well as food and pharmaceutical industry.

POSTGRADUATE STUDIES

Universiti Teknologi Malaysia (UTM)
Masters Degree in Science (July 2008 - December 2009)
Taught Course & Research
Field Specialization: Biotechnology (Environmental)
Current CPA: 3.72/4.00

ACADEMIC PROJECT

Dissertation: The project involves Ultra High Molecular Weight Polyethylene (UHMWPE) powder which is being used as a representative of the artificial hip joint wear debris. Various ranges of particle sizes (0.1 to 10μm) were used in order to examine its ability to be engulfed by the macrophages isolated from mouse peritoneal cavity. Most of the phagosytosed particle size range lies between 0.3 to 10μm. The study showed that the viability of the particle-laden macrophage was not affected as a result from the MTT assay. Earlier literatures have shown that the interaction between the particle and macrophage induces the secretion of cytokines as an immune response towards the invading particles.

University of Western Australia (UWA)
Doctor of Philosophy (September 2010 – March 2014)
Mode: Research (Full Time)
Field Specialization: Cancer Biology

ACADEMIC PROJECT

Project description: Triple negative breast cancers (TNBCs) are very aggressive cancers with poor prognosis and very low survival rates, known to be enriched in cancer stem cells (CSCs). CSCs within breast tumours are associated with cell proliferation and metastasis, and a less differentiated tumour phenotype and chemoresistance. Resistance of CSCs to therapy is linked to a dysfunctional immunoresponse and/or overexpression of pro-inflammatory mediators such as cytokines, chemokines and growth factors that sustain angiogenesis, tissue invasion and metastasis in the tumour environment. Previous studies have shown that tumours enriched in CSCs are sensitive to platinum-based anti-cancer drugs, such as cisplatin. The primary aim of this thesis was to examine the anti-cancer effects of cisplatin in TNBCs as a single drug as well as in combination with two new targeted therapies, the Engrailed-1 (EN1) and SOX2 interfering peptides (iPeps), with each targeting a different transcription factor (TF).

The work of this thesis showed that cisplatin is a potent chemotherapeutic drug for TNBCs enriched in CSCs as it acts to push them towards a more differentiated phenotype. In order to reduce cisplatin dose, and thus its toxicity, but still maintain its potent anti-cancer effects, combination therapies are important. Towards this, we tested and were able to show a significant synergistic effect of cisplatin with one of the interference peptides tested that targets the SOX2 oncogene in breast and ovarian cancers enriched in CSCs. In contrast, the EN1 iPep suppressed the effect of cisplatin. Instead the EN1 iPep showed a co-localization with gluthamyl-prolyl tRNA (EPRS), an important protein involved in the translational control of inflammatory agents. EN1 iPep binding with EPRS inhibited *EN1* TF function and resolved inflammation in inflammatory TNBC. This CSC cell population was targeted through the trickling of transcriptional and translational machinery using cisplatin and specific TF-targeting iPeps. These data highlight the importance of combinational therapies in successfully treating cancer, and provide strong evidence of the potential benefits of interference peptide technology in targeting specific tumour-seeding cells, without harming normal cells. This thesis sets the basis for future research to explore further, optimise and finally utilise this technology in combating cancer.

EMPLOYMENT

1. Tutor, Faculty of Biosciences & Bioengineering, (UTM, Skudai)	December 2009 –August 2010
2. Cell Culture Lab Teaching, UWA	March – April 2011
3. Tutor, Faculty of Biosciences & Medical Engineering, (UTM, Skudai)	March – November 2014
4. Senior Lecturer, Faculty of Biosciences & Medical Engineering, (UTM, Skudai)	November 2014 - present

AWARDS

● **Best Presenter,** *Undergraduate Project Symposium*	Semester 2, 2007/2008
● **Dean's List**, *UTM*	Semester 2, 2006/2007
● **Certificate of Merit**, *Perak State Tang Soo Do Club*	2002

COURSES ATTENDED

UTM Degree ++ (Biotechnology)	February 2007
UTM Degree ++ (How to Get Yourself Employed)	February 2008
Research Methodology (UTM, Skudai)	June 2009
Bio-Rad CFX96 Real-Time PCR Training (UTM, Skudai)	February 2010
Teaching in English Course (UTM,Skudai)	May 2010
Effective Classroom Communication in English Course (UTM, Skudai)	May 2010
Confocal Microscopy and Transmission Electron Microscopy (By CMCA UWA)	November 2011
Flow Cytometry (By CMCA UWA)	July 2011
Bengkel Pengenalan dan Penghasilan Dokumen Blossoms (UTM, Skudai)	February 2015
Basic E-Learning@UTM (UTM, Skudai)	April 2015
OBE- Constructive Alignment Concepts and Implementation Workshop (UTM, Skudai)	April 2015

LANGUAGES

Excellent speaking and writing ability: **English** and **Malay** Languages
Excellent speaking ability: **Tamil** and **Malayalam** Languages

English Language Examination: IELTS (January 2009)
Band Score: 7.5/9.0

TEACHING RESPONSIBILITIES

Cellular Biochemistry and Metabolism Laboratory (SMBB 1173)	Sem 2, 2013/2014
Animal Physiology Laboratory (SQBS 3273)	Sem 1, 2014/2015
Genetic Engineering laboratory (SMBB 2153)	Sem 1, 2014/2015
Cellular Biochemistry and Metabolism Laboratory (SMBB 1173)	Sem 2, 2014/2015
Cell Signalling (SQBS 4193)	Sem 2, 2014/2015
Toxicology (SQBS 4493)	Sem 2, 2015/2016
Genetic Engineering laboratory (SMBB 2153)	Sem 2, 2015/2016

GRANTS

1. PAS
   Title: Effects of cisplatin on triple negative breast cancer cells
   Duration: 6 June 2015- 6 june 2016 (1 year)
   Grant amount: RM 20,000

2. Fundamental Research Grant (FRGS) 2015-1
   Title: Anticancer mechanism of action of *C.nutans* and cisplatin in triple negative breast cancer cells
   Duration: 2 November 2015-1 November 2017 (2 years)
   Grant amount: RM 108,000

CONFERENCES AND PUBLICATIONS

1. Shamsir, S., Hasmuni, N., Halidan, H.A., Ismail, A.M., Prabhakaran, P., Balachanthra, S. and Rani, A. Chapter 4: Bioprospecting in aquaculture:Screening for antimicrobial activity from epibiotic marine microorganism. 2008. *Advances in Biosciences and Bioengineering*. Universiti Teknologi Malaysia, Malaysia: UTM Press, **4**:45-61.

2. Selvi Dev, Praseetha Prabhakaran, Luis Filgueira, K. Swaminathan Iyer and Colin L. Raston. 2012. Microfluidic fabrication of cationic curcumin nanoparticles as an anticancer agent. Communication. *Nanoscale*. **4**(8):2575–2579.

3. Prabhakaran, P., Hassiotou, F., Blancafort, P. and Filgueira, L. 2013. Cisplatin induces differentiation of breast cancer cells. Original Research Article. *Frontiers in oncology: Women's Cancer*. *Volume 3*, Article 134. doi:10.3389/fonc.2013.00134.

4. Annual Postgraduate Symposium, School of Anatomy and Human Biology, University of Western Australia, July 2011

5. Annual Postgraduate Symposium, School of Anatomy and Human Biology, University of Western Australia, July 2012

6. Poster presentation: Cisplatin induces differentiation of breast cancer cells. Experimental Biology Conference (21-25 April 2012), San Diego, CA

8. Annual Postgraduate Symposium, School of Anatomy and Human Biology, University of Western Australia, July 2013

9. Oral presentation: Cisplatin induces differentiation of breast cancer cells. Anticancer Drugs Meeting, 22-23rd August 2013, Stockholm, Sweden.

10. Conference Proceeding. II Anticancer Drugs Meeting 2013, August 22-23, Stockholm, Sweden. *OncoDrugs* 2013, Vol 1 (1, Supp):1s-44s

REFEREES

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