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CURRICULUM VITAE Salmaan H. Inayat-Hussain Ph.D, DABT 30 DEC 2011

ACADEMY OF SCIENCES
MALAYSIA

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EDUCATION

B.Sc (Hons) Pharmacology, Universiti Kebangsaan Malaysia 1991
Ph.D Biochemical Toxicology, MRC Toxicology Unit, University of Leicester, UK 1997

PROFESSIONAL CERTIFICATIONS

UK Institute of Biology Registered Toxicologist 2005-2010 (pending renewal)
Eurotox Registered Toxicologist (ERT) 2005-2010 (pending renewal)
Diplomate of the American Board of Toxicology (DABT) 2009-2013

EMPLOYMENT HISTORY

Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

- Dean of Faculty
2009-present
- Deputy Dean for Postgraduate, Research, Industrial and International Relations
2008-2009
- Professor of Toxicology, Environmental Health Programme
2008- present
- Associate Professor of Toxicology and Head, Environmental Health Programme
2003-2004
- Lecturer in Toxicology/Pharmacology, Department of Biomedical Science
1997-2002
- Tutor, Department of Biomedical Science
1993-1997 (*On PhD study leave, MRC Toxicology Unit, Leicester, UK*)

Melaka Biotechnology Corporation, Melaka, Malaysia

- Chief Executive Officer (*on secondment from the University*)
2006-2007

University of Colorado Health Sciences Center, Denver, Colorado, USA

- Visiting Research Associate, Molecular Toxicology and Environmental Health Sciences Program, School of Pharmacy
2004 (*9 month sabbatical*)
1999-2000 (*one year sabbatical*)

Pfizer Pharmaceuticals (Malaysia) Pte Ltd, Petaling Jaya, Malaysia

- Hospital Service Representative 1991-1992

PROFESSIONAL EXPERIENCE

- **Headed the Health and Safety consultancy section** of the “Detailed Environmental Impact Assessment (EIA) study for the proposed olefin and derivatives plants at Kerteh, Terengganu” from 1997-1998. This project was a joint-venture project between PETRONAS and Union Carbide Corporations (USA). The EIA report was presented to the Department of Environment and approved in 1999. The plant is currently operating in Kerteh, Malaysia.
- **Headed the direction setting for toxicology curriculum** at undergraduate and postgraduate levels. Conducted lectures in basic toxicology, occupational toxicology, environmental toxicology, health risk assessment and toxicology for industrial hygiene. 1997-present
- **World Health Organisation (WHO) Temporary Adviser for the Development of Human Health Risk Assessment Toolkit for Country Use.** This is an International Programme on Chemical Safety (IPCS) project on the Harmonization of Approaches to the Assessment of Risk from Exposure to Chemicals. Planned, organized and piloted the testing phase of the draft risk assessment toolkit in Malaysia for government regulators (Department of Occupational Safety and Health, Department of Environment, Pesticide Board, Food Safety and Quality, Ministry of Health) 2007-2010
- **Regional Capacity Building Program for Health Risk Management of Persistent Organic Pollutants (POPs) in South East Asia.** Member of the National Consultant Team to conduct human health risk assessment for a landfill site in Malaysia. This project was funded by the World Bank and contracted to Hatfields Consultant. 2008-2009
- **Project Leader, Mutagenicity Testing Facility, Melaka Biotechnology Corporation** in accordance with the OECD Principles of Good Laboratory Practice (GLP). Involved in the application for government funding, inception of the laboratory design and procurement of the equipment. Monitored renovation of laboratory according to agreed design and specifications. Actively involved in the establishment of in vitro mutagenicity test guidelines according to the OECD Principles of GLP. Responsible for managing laboratory staff which includes a Quality Assurance Manager and 5 study personnel. Responsible for the overall implementation of GLP leading to certification of GLP by Standards Malaysia on 4th August 2011. 2007-2011
- **Trainer for Petrochemical Industries**
 - Conducted training on Chemical Hazard Communication and Toxicology to PETRONAS staff at all levels. The training covers MSDS, hazard communication, fundamentals of toxicology, biomonitoring of chemicals including, benzene, toluene, xylene, hydrogen sulfide and others. 2003-2010
 - Conducted training to staff on behalf of TALISMAN in mercury management policy. The training covers safety awareness, understanding the health hazards

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of mercury, biological monitoring, occupational safety levels and biological exposure index. 2008-2009

- **Member of National Coordinating Council, Ministry of International Trade and Industries on Globally Harmonized System (GHS) on Hazard Classification and Labeling of Chemicals and Safety Data Sheets.** This council oversees the progress, strategies and policy direction on GHS implementation and the promotion of awareness and capacity building programmes on GHS. It is expected that GHS will be implemented at the workplace in the near future. 2008-present
- **Expert Advisor on the GHS Implementation Roadmap for Malaysia (MyGHS).** The project "Training and Capacity Building for the Implementation of the Globally Harmonised System of Classification and Labelling (GHS) in Malaysia" is implemented with the technical assistance of the United Nations Institute for Training and Research (UNITAR), the International Labour Organization (ILO) and the financial support of the European Union. 2010-2012
- **Toxicology expert to the Food Safety and Quality Division, Ministry of Health Malaysia** to evaluate the toxicological information and pertinent literature on added ingredients, food additives and processing aids. 2009-present
- **Expert advisor on the establishment of OECD Good Laboratory Practice (GLP) documentation for Malaysian GLP Monitoring Authority, Standards Malaysia, Ministry of Science, Technology and Innovation.** 2008- present
- **Senior Member, Japanese Society for Promotion of Science-Vice Chancellors Committee on Environmental Toxicity Evaluation and Risk Management.** This is a 10 year cooperative project for the advancement of science in the field of environmental toxicity testing and risk assessment between Kyoto University, Okayama University and Universiti Kebangsaan Malaysia. 2002-2010
- **Toxicology expert to the Department of Occupational Safety and Health (DOSH), Ministry of Human Resources Malaysia** to advise on chemicals requiring medical surveillance. Also conducted a 3-day training for DOSH officers on "Fundamental of Occupational Toxicology and Toxicity Testing" and a supervisor for an Assistant Director (Ir Mokhtar Sabtu) on a master's project on occupational toxicology of benzene in petrochemical exposed workers. 2010-present
- **Responsible for managing, supervising and providing direction for research relating to the mechanisms of toxicity and cell death** induced by benzene metabolites, quinones and styryllactones. Additional research was conducted on assessment of a novel biomarker for pesticide poisoning in occupationally exposed farmers in Malaysia. The research has resulted in publications in peer-reviewed toxicology journals of high impact factors (see publication list below). 1997-present

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- **Consultant, Toxicological Risk Assessment of Mercury in petrochemical exposed workers.** This is a consultancy project where data from the medical surveillance and biomonitoring will be analyzed and a risk assessment will be carried out on the workers. The findings from this study have spurred the need to revise the mercury biomonitoring guideline by Department of Occupational Safety and Health. September 2010- March 2011.
- **Engen Petroleum Limited, Cape Town, South Africa.** Have experienced using SAP Product Safety and Dangerous Goods for the production of material safety data sheet. Learnt how to create a toxicology database for hazardous chemicals for the raw materials, finished petroleum products and waste products in a GHS compliant manner. Prepared material safety data sheets on benzene, MTBE, asbestos waste and waste containing mercury. Nov-Dec 2010
- **Petronas Aromatics Sdn Bhd and Petronas Penapisan Terengganu Sdn Bhd, Kerteh, Terengganu.** Headed a collaborative study on the assessment of occupationally exposed workers to benzene and the relationship between biomarkers of exposure and genotoxic effects. 38 workers during turnaround activity were recruited for the study and blood disorder, DNA damage and urinary biomarker were determined for chronic toxicity. April-2011- present
- **Expert Panel, Joint FAO/WHO Meeting on Pesticide Residues (JMPR) Roster of Toxicological and Epidemiological Experts.** Members of the roster will be considered for future Joint Meetings on Pesticide Residues and for other activities relating to pesticide residues in food. This is a 5-year appointment. January 2011-January 2016
- **Consultant, World Health Organisation (WHO) and Division of Engineering, Ministry of Health (MOH)**for development of guidance document on health risk assessment for municipal solid waste management. The document is completed and submitted to WHO and MOH for publication. April 2011-November 2011.
- **Technical Committee Member for National Mercury Management Guidelines for Oil & Gas Industry.** In this role, I provide toxicological input which is critical for DOSH to revise the biomonitoring guideline for mercury exposure among petrochemical workers. The guideline has been published since November 2011 Feb 2011-Nov 2011

TRAINING AND CERTIFICATION

- **Occupational and Environmental Toxicology,** School of Medicine, University of Colorado Health Sciences Center. July 1999
- **Toxicogenomics in the Trenches,** SOT 2000 Annual Meeting Continuing Education, Philadelphia, Penn, USA. March 2000
- **A Biotechnology Platform for Toxicology,** IUTOX 2001 Continuing Education, Brisbane, Australia. July 2001

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- **Molecular Biology in Postgenomic Era**, University of Osaka, Japan. March 2003
- **International Workshop on Toxicology** Towards Diplomate of American Board of Toxicology (DABT) (Mid-America Toxicology Course), Bangalore, India. October 2007
- **Chemical Safety Management under REACH**, RIVM-IRAS, Bilthoven, Netherlands. January 2009
- **Intermediate GHS Training and Chemical Health Risk Assessment**, Department of Occupational Safety and Health, Bangi, Malaysia. April 2009
- **OECD GLP Training Pharmaceutical Services Corporation (Singapore)**, Melaka Biotechnology Corporation, July 2009
- **eCheminfo Workshop on Predictive ADME Toxicology**, Oxford University, UK. July 2009
- **Technologies and Tools for Toxicity Testing in the 21st Century**, SOT 2010 Annual Meeting and ToxExpo Continuing Education Course, Salt Lake City, Utah, USA March 2010
- **Essentials of Leadership Programme**, Centre for Management Development, London Business School. Genting Highlands, Malaysia May 11-13, 2010
- **Protecting Human Health: Use of Toxicological and Epidemiological Data in Determining Safe Levels for Human Exposure**. SOT 2011 Annual Meeting and ToxExpo Continuing Education Course, Washington DC, USA March 2011

EDITORIAL ACTIVITIES

- **Associate Editor**
 - Food and Chemical Toxicology (2011-present)
- **Editorial Board Member**
 - Chemico-Biological Interactions (2001-2011)
 - Journal of Toxicological Sciences (2002-present)
 - Human and Experimental Toxicology (2005-present)
- **Journal reviewer for** Chemical Research in Toxicology, Food and Chemical Toxicology, Life Sciences, Cancer Chemotherapy and Pharmacology, Molecular Pharmacology, Toxicological Sciences, International Journal of Cancer, Toxicology and Applied Pharmacology, Toxicology, Mutation Research

SOCIETY & COMMITTEE MEMBERSHIPS

- **President**, Malaysian Society of Toxicology (2011-present)
- **Full Member**, Society of Toxicology (SOT, 2004-present)
- **Member**, Malaysian Industrial Hygiene Association (2010-present)

OTHER PROFESSIONAL TRAINING & EXPERIENCE

- Visiting Scientist, Biochemical Toxicology Division, MRC Toxicology Unit, Leicester, United Kingdom (Supervisors: Prof G. M Cohen and Dr.Kelvin Cain) 1999
- Visiting Scientist, Department of Biochemistry, University of Osaka, Osaka, Japan (Supervisor: Prof Naoyuki Taniguchi) 2000
- UNESCO Research Fellow, Division of Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden (Supervisor: Prof. Sten Orennius) 2002
- Honorary Research Fellow, Department of Molecular Medicine, King's College, London, United Kingdom (Host: Prof. Farzin Farzaneh) 2002
- Visiting Scientist, Department of Biomaterials and Biomimetics, Guy's, King's and St Thomas' Dental Institute, University of London, UK (Host: Dr. Lucy Di Silvio) 2004
- Visiting Scientist, Department of Global Engineering, Kyoto University, Kyoto, Japan (Host: Prof S Morisawa) 2005& 2008
- Visiting Scientist, Research Institute of Bioresources, Okayama University, Okayama, Japan (Host: Prof I Aoyama) 2005
- Visiting Scientist, Department of Haematological and Molecular Medicine, King's College, London, UK (Host: Prof Dr. Farzin Farzaneh) 2006
- Visiting Scientist, School of Life Sciences, Keele University, Keele, UK (Host: Prof. Dr. Gwyn T Williams) 2006, 2008 & 2009
- Visiting Scientist, Department of Haematological and Molecular Medicine, King's College, London, UK (Host: Prof Dr. Farzin Farzaneh) 2008

HONOURS AND AWARDS

- First prize for the best oral presentation at the British Toxicology Society Spring Meeting, York (1996)
- Recipient of the Biochemical Society Travel Grant to attend the International Union of Biochemistry and Molecular Biology (IUBMB) meeting in Edinburgh, 1996
- Recipient of the Wellcome Trust Research Travel Grant, January-February, 1999, MRC Toxicology, Leicester, UK.

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- Visiting Research Associate Award from the University of Colorado Health Sciences Center, Denver, CO (1st April, 1999- 31st March, 2000, 1 April -31 Dec, 2004)
- Recipient of the Young Scientist Travel Fellowships Award by IUBMB to participate in the Young Scientist Travel Fellowships Symposium and 18th International Congress of Biochemistry and Molecular Biology, 13-20 July, 2000 Birmingham, UK
- Recipient of the 'International Fellowship of the Dan Charitable Trust Fund for Research in the Biological Sciences', Osaka , Japan (September-October, 2000)
- Recipient of the International Union of Toxicology Junior Fellowship to attend the ICT-IX, Brisbane, Australia (8-13 July, 2001)
- Honorary Research Fellow&Recipient of the Wellcome Trust Research Travel Grant, Department of Molecular Medicine, Kings' College, London (1-10th September, 2002).
- Recipient of "Short-term UNESCO Fellowship", 11-31 May, 2002 at Karolinska Institutet, Stockholm, Sweden
- Recipient of 26th International Molecular Biology Network-AMBO Fellowship 10-21 March, 2003, Research Institute of Microbial Diseases, Osaka University, Osaka, Japan
- Awarded 2004 Society of Toxicology/International Union of Toxicology AstraZeneca Fellowship, 21 March, 2004, Baltimore, Maryland, USA
- Recipient of the Royal Society Short-Term Fellowship, 3-14 October, 2004, Guy's, King's and St Thomas' Medical and Dental Institute, Dept. Biomaterials, King's College, London, UK.
- Visiting Scientist under the Japanese Society for Promotion of Science JSPS-VCC Visiting Scientist Fellowship to Kyoto University and Okayama University, Japan from 26 Jan- 10 Feb 2005, 15-24 Nov 2006 & 20-29 Nov 2008

PUBLICATIONS

H-index =13, Citations=501

Journals (*corresponding author)

1. Cain, K*, **Inayat-Hussain, S.H.**, Wolfe, J.T. and Cohen, G.M. (1994) DNA fragmentation into 200-250 and/or 30-50 kilobase pair fragments in rat liver nuclei is stimulated by Mg²⁺ and Ca²⁺/Mg²⁺ but not by Ca²⁺ alone. **Federation of European Biochemical Societies Letters** 349, 385-391.
2. Cain, K*, **Inayat-Hussain, S.H.**, Kokileva, L. and Cohen, G.M. (1994) DNA cleavage in rat liver nuclei activated by Mg²⁺ or Ca²⁺ + Mg²⁺ is inhibited by a variety of structurally unrelated inhibitors. **Biochemistry and Cell Biology** 72, 631-638

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3. Cain, K.*, **Inayat-Hussain, S.H.**, Kokileva, L. and Cohen, G.M. (1995) Multi-step DNA cleavage in rat liver nuclei is inhibited by thiol reactive agents. **Federation of European Biochemical Societies Letters** 358, 255-261.
4. Cain, K.*, **Inayat-Hussain, S.H.**, Couet, C, Cohen, G.M. (1996) A cleavage site-directed inhibitor of interleukin-1 β -converting enzyme-like proteases inhibits apoptosis in primary cultures of rat hepatocytes. **Biochemical Journal** 314, 27-32
5. Cain, K.*, **Inayat-Hussain, S.H.**, Couet, C, Qin, H-M, Oberhammer, F.A. (1996) A novel method for detecting apoptosis shows that hepatocytes undergo a time dependent increase in DNA cleavage and chromatin condensation which is augmented after TGF- β_1 treatment. **Cytometry**, 23, 312-321
6. Oberhammer, F*., Froschl, G., Tiefenbacher, R., **Inayat-Hussain, S.H.**, Cain, K. and Stopper, H. (1996) Hepatocyte death following transforming growth factor- β_1 addition. **Microscopy Research and Technique**, 34, 3, 247-258.
7. **Inayat-Hussain, S.H.**, Couet, C, Cohen, G.M. and Cain, K.* (1997) Processing/activation of CPP32-like proteases is involved in transforming growth factor- β_1 induced apoptosis in hepatocytes. **Hepatology**, 25, 1516-1526.
8. **Inayat-Hussain, S.H.***, Cohen, G.M. and Cain, K. (1998) Mn²⁺ activates DNA cleavage in rat liver nuclei. **Asia Pacific Journal of Molecular Biology and Biotechnology**, 6, 2 , 67-73
9. **Inayat-Hussain, S.H.***, Osman, A.B., Din, L.B., Ali, A.M., Snowden, R.T., MacFarlane, M., Cain, K. (1999) Caspases-3 and -7 are activated in goniiothalamine-induced apoptosis in human Jurkat T-cells. **Federation of European Biochemical Societies Letters** 13;456(3):379-83
10. **Inayat-Hussain S.H.*** (1999) Liver apoptosis. **Asia Pacific Journal of Molecular Biology and Biotechnology** 7(2): 97-107 (review)
11. Syarif, SL*, Uttaman, A, Jamal Hisham, H, **Inayat-Hussain, SH**, Jamil, MRM (1999) The effect of pesticide on the activity of serum cholinesterase and current perception threshold on the paddy farmers in the Muda Agricultural Development Area, MADA, Kedah, Malaysia. **Medical Journal of Malaysia** 54 (3): 320-324
12. **Inayat-Hussain, S.H.***, Cohen, G.M. and Cain, K (1999) A reappraisal of the role of zinc in TGF- β_1 induced apoptosis in hepatocytes. **Cell Biology and Toxicology** 15 (6), 381-387
13. **Inayat-Hussain, SH**, McGuinness S.M., Johansson, R., Lundstrom, J. and Ross, D.* (2000) Caspase-dependent and -independent mechanisms in apoptosis induced by hydroquinone and catechol metabolites of remoxipride in HL-60 cells. **Chemico-Biological Interactions** 128 (1), 51-63

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14. Ali, AM,* Umar-Tsafe, N., Mohamad, SM, Oo, KT, Yusoff, K., Dhaliwal, J, Abdullah, N, Din, LB and **Inayat-Hussain, SH** (2000) Cell cycle and apoptosis induction by goniiothalamine in CEM-SS T-lymphoblastic leukemia cell line. **Journal of Biochemistry, Molecular Biology and Biophysics** 5, 1-9.
15. **Inayat-Hussain, S.H.***, Winski, SL, Ross, D (2001) Differential involvement of caspases in hydroquinone-induced apoptosis in human leukemic HL-60 and Jurkat cells. **Toxicology and Applied Pharmacology** 175, 95-103.
16. **Inayat-Hussain SH***, Annuar BO, Din LB and Taniguchi N (2002) Altholactone, A Novel Styryl-Lactone Induces Apoptosis Via Oxidative Stress In Human HL-60 Leukemia Cells. **Toxicology Letters** 131, 153-159.
17. **Inayat-Hussain, SH***, Osman, AB, Din, LB, Ali, AM and Ross, D (2003) Loss of mitochondrial transmembrane potential and caspase-9 activation during apoptosis induced by the novel styryl-lactone goniiothalamine in HL-60 leukemia cells. **Toxicology In Vitro** 17, 433-439.
18. **Inayat-Hussain, S.H*** and Thomas, N (2004) Recent Advances In The Discovery And Development Of Lactones And Stilbenes In Anticancer Therapy. **Expert Opinion on Therapeutic Patents** 14 (6):819-835 (review)
19. N.F. Rajab, T.A. Yaakob, B.Y. Ong, M. Hamid, A.M. Ali, B.O. Annuar, **S.H. Inayat-Hussain**. (2004). DNA damage evaluation of hydroxyapatite on fibroblast cell L929 using the single cell gel electrophoresis assay. **Medical Journal of Malaysia**, 59(Suppl B): 170-171.
20. **Inayat-Hussain, S.H.***, N.F. Rajab, H. Roslie, A.A. Hussin, A.M. Ali, B.O. Annuar. (2004). Cell Death Induced by Hydroxyapatite on L929 Fibroblast Cells. **Medical Journal of Malaysia**, 59(Suppl B): 176-177.
21. **Inayat-Hussain, SH*** and Ross, D (2005) Differential involvement of the mitochondrial/caspase-9 dependent apoptotic pathway in hydroquinone treated HL-60 and Jurkat leukemia cells. **Chemical Research in Toxicology** 18(3):420-7.
22. Dehn, DL, **Inayat-Hussain, SH** & Ross D* (2005) RH1 induces cellular damage in an NQO1-dependent manner: Relationship between DNA cross-linking, cell cycle perturbation and apoptosis. **Journal of Pharmacology and Experimental Therapeutics**. 313(2):771-9.
23. Rajab, NF*, Hamid, Z, Hassan, H, Ali, AM, Din, LB & **Inayat-Hussain, SH** (2005) Evaluation of the cytotoxic and genotoxic effects of goniiothalamine in leukemic cell lines. **Environmental Mutagen Research** 27; 161-164
24. Yip FW, Farina Y, Teoh SG, Inayat-Hussain SH, Yamin BM, Baba I & Ali AM (2006) Effect of Additional Methylene Groups of Triphenyltin(IV) Complex Derivatives of Dicarboxylic Acids on Cytotoxicity Tests on Human Promyelocytic Leukemic Cells and ¹¹⁹Sn NMR Resonance, **Malaysian Journal of Pharmaceutical Sciences**, 4(2): 33-47

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25. Chan, K.M., Rajab, N.F., Ishak, M.H.A., Ali, A.M., Yusoff, K., Din, L.B. & **Inayat-Hussain, S.H.*** (2006) Goniiothalamine induces apoptosis in vascular smooth muscle cells. **Chemico-Biological Interactions** 159(2):129-40
26. Zafar, KS, **Inayat-Hussain, SH**, Siegel, D, Bao, A, Shieh, S & Ross, D * (2006) Overexpression of NQO1 protects human SK-N-MC neuroblastoma cells against dopamine-induced cell death. **Toxicology Letters** 166(3); 261-267
27. Siew EL, Rajab, NF, Annuar, BO, Sudesh, K, **Inayat-Hussain, SH*** (2007) In vitro biocompatibility Evaluation Of Poly(3-Hydroxybutyrate-Co- 4-Hydroxybutyrate) [P(3HB-Co-4hb) Copolymer In Fibroblast Cells. **Journal of Biomedical Materials Research A** 81(2):317-325
28. **Inayat-Hussain SH ***, Lubis, SH, Ghazali, R, Sakian, NI., Ghazali, AR, Ali, NS, Sersi, EM, Lee, MT, Zainab, AM, Hashim, S, Ghazali, MS, Saidin, MN, Ab Rahman, AR, Rafaai, MJM, Omar, S, Rapii, R, Othman, R, Chan, TL, Johari, A, Soon, WH, (2007) Is beta-glucuronidase a novel biomarker for anticholinesterase poisoning? A Malaysian experience. **Toxicology and Applied Pharmacology**;219(2-3):210-6.
29. Zafar, KS, **Inayat-Hussain, SH** & Ross, D* (2007) A comparative study of proteasomal inhibition and apoptosis induced in N27 mesencephalic cells by dopamine and MG132. **Journal of Neurotoxicology** 102(3):913-21.
30. Lubis SH*, El Sersi M, **Inayat-Hussain SH**, Sakian NI, Salleh R, Rafai J, Al Khamesey K. (2008) A biomarker for exposure to organophosphate and carbamate pesticides. *Asia Pac J Public Health*. 2008 Oct;20 Suppl:162-5.
31. Siew EL, Rajab, NF, Annuar, BO, Sudesh, K, **Inayat-Hussain, SH*** (2009) In vitro genotoxicity evaluation of Poly(3-Hydroxybutyrate-Co- 4-Hydroxybutyrate) [P(3HB-Co-4hb) Copolymer In Salmonella typhimurium and chinese hamster V79 lung fibroblasts . **Journal of Biomedical Materials Research A** 91(3):786-794
32. **Inayat-Hussain SH***, Wong LT, Chan KM, Rajab NF, Din LB, Harun R, Kizilors A, Saxena N, Mourtada-Maarabouni M, Farzaneh F, Williams GT (2009) RACK-1 overexpression protects against goniiothalamine-induced cell death. **Toxicol Lett**. 191(2-3):118-22.
33. **Inayat-Hussain SH***, Ibrahim HA, Siew EL, Rajab NF, Chan KM, G T Williams, Ross D. (2010) Modulation of the benzene metabolite hydroquinone induced toxicity: Evidence for an important role of fau. **Chem Biol Interact**. 184(1-2):310-312
34. **Inayat-Hussain SH***, Chan KM, Rajab NF, Din LB, Chow SC, Kizilors A, Farzaneh F, Williams GT. (2010) Goniiothalamine-induced oxidative stress, DNA damage and apoptosis via caspase-2 independent and Bcl-2 independent pathways in Jurkat T-cells. **Toxicol Lett**. 193(1):108-114

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35. Chan KM, Rajab NF, Siegel D, Din LB, Ross D, **Inayat-Hussain SH^{*}** (2010) Goniothalamine induces coronary artery smooth muscle cells apoptosis: the p53-dependent caspase-2 activation pathway. **Toxicol Sci.** 116(2):533-548.
36. Arias-Barreiro CR, Okazaki K, Koutsaftis A, **Inayat-Hussain SH**, Tani A, Katsuhara M, Kimbara K & Mori IC (2010) A Bacterial Biosensor for Oxidative Stress Using the Constitutively Expressed Redox-Sensitive Protein roGFP2. **Sensors** 10, 6290-6306.
38. Kee, CH, Ariffin, A, Awang, K, Takeya, K, Morita, H, **Inayat-Hussain S**, Chan, KM, Wood, PJ, Threadgill, MD, Lim, CG, Ng, SW, Weber, JFF & Thomas NF (2010) Challenges associated with the synthesis of unusual *o*-carboxamido stilbenes by the Heck protocol: Intriguing substituent effects, their toxicological and chemopreventive implications. **Org. Biomol. Chem.**, 2010, **8**, 5646–5660
39. Hasiah AH, Ghazali AR^{*}, Weber J, Velu S, Thomas N, **Inayat Hussain SH** (2011) Cytotoxic and antioxidant effects of methoxylated stilbene analogues on HepG2 hepatoma and Chang liver cells. **Hum Exp Toxicol.** 30(2):138-4
40. Roslie, H, Chan, KM, Rajab, NF, Velu, SS, Illah, S, Bunyamin, S, Weber, JFF, Thomas, NF, Majeed, ABA, Myatt, G & **Inayat-Hussain SH^{*}** (2012) 3,5-Dibenzoyloxy-4'-hydroxystilbene induces early caspase-9 activation during apoptosis in human K562 chronic myelogenous leukemia cells. *J. Tox Sci* (in press)

Chapters in Book/Chapter in Encyclopedia

1. Lubis, S.H., Hashim, J.H., Ismail, N.H. and **Inayat-Hussain, S.H.** (1998) Pattern of diseases among rice farmers exposed to pesticides in the Muda Area, p.192-9, In: **Rice Agroecosystem of the Muda irrigation Scheme Malaysia**. B.M. Nashriyah, N.K. Ho, B.S. Ismail, A.B. Ali and K.Y. Lum. (Eds) MINT-MADA, Malaysia 256pp
2. Satoh, T and **Inayat-Hussain, S.H.** (2002) *Environmental Toxicology and Human Health in Knowledge For Sustainable Development- An Insight into the Encyclopedia of Life Support Systems Vol. II; section 11.4, pp757-780, UNESCO Publishing/ EOLSS Publishers, Paris, France, Oxford, UK*
3. Lubis, SH, Abdullah, U, Abdul Ghani, NH, , Jamil, MRM, **Inayat-Hussain SH** (2002) The Current Perception Threshold (CPT) among rice farmers in Muda, Kedah, and fishermen in Setiu, Terengganu. p155-160, In: **Sustainable Rice Production In Malaysia** Beyond 2000 Institut Penyelidikan Teknologi Nuklear Malaysia (MINT) and Muda Agricultural Development Authority (MADA)
4. **Inayat-Hussain SH**, Siew EL, Rajab NF (2008) In vitro toxicity testing as a predictive tool for safety evaluation of biomaterials. (chapter 20 in **Cellular Response to Biomaterials**, CRC Press & Woodhead Publishing Limited, UK) pp 508-537
5. **Inayat-Hussain SH**, Bakar JA, Ibrahim E, Mokhtar M and Nunis MA (2009) Malaysia (chapter 96 in **Information Resources in Toxicology**, Elsevier and AP Press) pp1003-1013

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6. Satoh T, **Inayat-Hussain SH**, Kamishima M and Ueyama J (2010) Novel Biomarkers of Organophosphate Exposure (chapter 21 in **Anticholinesterase Pesticides: Metabolism, Neurotoxicity, and Epidemiology**, Wiley-VCH).

RESEARCH GRANTS

No.	Title	Place	Status	Financial Support
1	Characterization of the mechanisms of TGF- β_1 induced apoptosis in primary hepatocytes	MRC Toxicology Unit and University of Leicester, UK (1993-1997)	Completed (Doctor of Philosophy research)	UKM and MRC
2	Molecular mechanisms of goniiothalamine induced apoptosis in leukemia cells	MRC Toxicology Unit and University of Leicester, UK (1999)	Completed (Project Leader)	MRC and Wellcome Trust
3	Identification and evaluation of structure, bioactive agents and consumption of local sea-cucumbers	Faculty of Allied Health Sciences, UKM (1998-1999)	Completed (joint project)	IRPA (09-02-02-0021)
4	Screening for antiviral, anticancer, antinematode and antimicrobial activities of medicinal plants of the Malays and Orang Asli	Faculty of Food Science and Biotechnology, UPM (1998-2000)	Completed (joint project)	IRPA (03-03-04-05)
5	NQO1 protection in benzene toxicity	School of Pharmacy, University of Colorado Health Sciences Center (1999-2000)	Completed (Head, Apoptosis Research)	NIH (5RO1 ES09554)
6	Mechanistic Studies on Aplastic Anemia	School of Pharmacy, University of Colorado Health Sciences Center (1999-2000)	Completed (Head, Apoptosis Research)	AstraZeneca
7	Safety evaluation of indigenous cosmetic ingredients	SIRIM and Faculty of Science and Technology, UKM (1999-2000)	Completed (Joint project)	IRPA (09-01-01-0021)

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8	Role of oxidative stress in altholactone induced apoptosis in HL-60 human leukemia cells	Dept of Biochemistry, University of Osaka Medical School (2000)	Completed (Project Leader)	Nippon Trust Bank Limited
9	Synthesis, characterization & biological activity study of new oxygen and sulphur chelated organotins	Faculty of Science and Technology, UKM and Faculty of Allied Health Sciences, UKM (1999-2003)	Completed (Joint project; involved in toxicology assessment)	IRPA (09-02-02-0133)
10	Biological Assessment of Bone Graft Substitutes (Top down Project: Biomaterials for Medical Applications)	Faculty of Allied Health Sciences, UKM and Faculty of Science and Technology, UKM (2002-2005)	Completed (Head of Research Group; involved in cytotoxicity and apoptosis)	IRPA (03-02-02-0035PR)
11	Effects of Tocotrienol on Oxidative Stress and Inflammation In Patients with IHD and Hypercholesterolemia	Faculty of Medicine and HUKM, Faculty of Allied Health Sciences, UKM (2002-2005)	Completed (Joint project: involved in oxidative stress assessment)	IRPA (06-02-02-0026PR)
12	Effect of local natural products such as goniiothalamine on cellular proliferation and apoptosis induction pertaining to coronary artery restenosis post-angioplasty.	Faculty of Medicine, HUKM and Faculty of Allied Health Sciences, UKM (2002-2005)	Completed (Joint project: involved in mechanisms of apoptosis)	IRPA (06-02-04-0374-PR0014/06-05)
13.	Japan Society for Promotion of Science (JSPS) – Malaysian Vice-Chancellors' Council (VCC) Ten Year Research Programme Environmental Science, Ethics and Engineering: Towards Zero Discharge Society: 2000-2009 (Group: Environmental Toxic Evaluation & Management & Risk Assessment)	<u>Malaysia</u> UKM,USM,KUSTE M & UM <u>Japan</u> Kyoto University & Okayama University (2000-2009)	Completed (Joint project between Malaysia & Japan)	JSPS-VCC
14	Molecular and	University of	Completed	NIH (NCI) RO1

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	Biochemical Studies on DT-diaphorase	Colorado (2004)	(Leading the Apoptosis Research)	CA51210 (12-16)
15	NQO1, oxidative stress and proteasomal inhibition	University of Colorado (2004)	Completed (Headed the Apoptosis Research)	NIH (NINDS) RO1 NS44613 (01-05)
16	Molecular Mechanism of Goniiothalamine induced apoptosis on vascular smooth muscle cells as a model for restenosis postangioplasty	Universiti Kebangsaan Malaysia (2005-2007)	Completed (Project Leader)	SAGA-Akademi of Science, Malaysia
17	Assessment of environmental genotoxins in industrial wastewater and river	Universiti Kebangsaan Malaysia (2005-2006)	Completed (Project Leader)	Kurita Water and Environment Foundation (Japan)
18	Analysis of the molecular mechanisms controlling the induction of apoptosis by natural styryllactones including goniiothalamine	Universiti Kebangsaan Malaysia, Keele University and King's College London (2005-2009)	Completed (Project Leader)	The Wellcome Trust (UK)
19	Molecular mechanisms of styryllactone induced apoptosis	Universiti Kebangsaan Malaysia (2005-2007)	Completed (Project Leader)	Third World Academy of Sciences (Italy)
20.	Molecular mechanisms of the antitumor quinone RH1 induced apoptosis	Universiti Kebangsaan Malaysia and University of Colorado Health Sciences Center (2005-2006)	Completed (Project Leader)	UKM Medical Molecular Biology Fundamental Grant
21	Biomonitoring of pesticides toxicity using beta-glucuronidase as a novel biomarker in plasma of exposed farmers	Universiti Kebangsaan Malaysia, International Islamic University of Malaysia, Chiba University & Muda Agriculture Development Authority (MADA) (2005-2006)	Completed (Project Leader)	Muda Agricultural Development Authority
22	In vitro cytotoxic and	Universiti	Completed	Q-Nutrient Pte

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	apoptotic effects of novel microbial fermentation products Oncogen XP180 and Oncolyn	Kebangsaan Malaysia (2006)	(Project Leader)	Ltd
23	Mutagenicity Testing facility in Accordance with OECD Principles of Good Laboratory Practice Melaka	Universiti Kebangsaan Malaysia and Melaka Biotechnology Corporation (2007-2011)	Completed (Project Leader)	MOSTI
24	Design, Synthesis and Pharmacological Properties of Styryl Derivatives, Their Chelated Cyclen (1,4,7,10-Terazacyclododecane)-Bound Analogues and Oligomers	Universiti Kebangsaan Malaysia, Universiti Teknologi Mara & Universiti Malaya (2006-2009)	Completed (Project Leader in UKM)	MOSTI
25	Analysis of The Molecular Mechanisms Controlling the Induction of Apoptosis by Benzene Derived Quinone	Universiti Kebangsaan Malaysia, University of Colorado & University of Keele, UK (2008-2012)	Ongoing (Project Leader)	UKM Research University Grant
26	Role of Fau and NQO1 in Glioblastoma Multiforme (GBM) and Colorectal Cancer (CRC)	Universiti Kebangsaan Malaysia, University of Colorado & University of Keele, UK (2010-2013)	Ongoing (Project Leader)	HiCOE Grant, Ministry of Higher Education
27	Molecular Mechanism of trifluoromethoxy-Goniothalamin Induced Apoptosis in Jurkat Lymphoblastic Cells	Universiti Kebangsaan Malaysia (2011-2013)	Ongoing (Co-researcher)	FRGS Grant, Ministry of Higher Education
28	Understanding Molecular Signature of Leukaemia Stem Cells by targeting Genes Regulating Hematopoietic Stem Cells Fate: Benzene as a Model	Universiti Kebangsaan Malaysia (2011-2013)	Ongoing (Co-researcher)	FRGS Grant, Ministry of Higher Education

ATTENDANCE IN CONFERENCES/SEMINARS/WORKSHOPS/SYMPOSIUMS (2009-present)

1. Invited Speaker, Natural Compounds 2012: Regulators of Cell Signaling Pathways and Novel Therapeutic Tools, Luxembourg, Germany, 25-27 January 2012.
2. Invited Speaker, 3rd Global Quality Assurance Conference (3rd GQAC), Kyoto, Japan, 13-16 November 2011. (Country Representative)
3. Speaker, 39th International MEDICHEM Congress on Occupational Environmental Health in the Production and Use of Chemicals, Heidelberg, Germany, 2-8 June 2011.
4. Keynote Speaker, 3rd Medical Undergraduate Annual Scientific Meeting, Kuala Lumpur, Malaysia, 31 May 2011.
5. Apoptosis/Session Chairman, 50th Annual Meeting of the Society of Toxicology, Washington D.C., USA, 6-10 March 2011.
6. Invited Speaker, 2nd International Cancer Research Symposium, Trivandrum, India, 17-21 December 2010.
7. Invited Speaker, 2nd Asian Conference on Environmental Mutagens, Pattaya, Thailand, 15-18 December 2010.
8. Distinguished Speaker, Inaugural Screening Asia Conference & Exhibition, Singapore, 15-16 November 2010.
9. Invited Speaker, 3rd National Industrial Hygiene Conference, Kuala Lumpur, Malaysia, 5-6 May 2010.
10. Participant, 49th Annual Meeting & ToxExpo (2010 Society of Toxicology), Utah, USA, 7-11 March 2010.
11. Invited Speaker, Asian Symposium on ADMET Profiling in Drug Discovery: Metabolism and Drug Safety, Singapore, 15-16 September 2009.
12. Invited Speaker, The 2009 Benzene Symposium, Munich, Germany, 7-11 September 2009.
13. Participant, eCheminfo Workshop on Predictive ADME Toxicology Medical Sciences Teaching Laboratory, Oxford, UK, 25-31 July 2009.
14. Committee/Session Chairman/Invited Speaker, 7th COSTAM/SFFR (Asia Malaysia) International Workshop 2009, Langkawi, Malaysia, 9-12 July 2009.

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15. Advisor, Pre-Conference Toxicology Workshop – Apoptosis: Mechanism of Cell Death & Therapeutic Implications, Kuala Lumpur, Malaysia, 8 July 2009.
16. Invited Speaker, International Society for the Study of Xenobiotics (ISSX), Bangkok, Thailand, 10-12 May 2009.
17. Participant, International Short Course: Chemical Safety Assessment under REACH, Bilthoven, Netherland, 19-22 January 2009.