

CURRICULUM VITAE
(Dated: December 2011)

DITERIMA

23 DEC 2011

AKADEMI SAINS MALAYSIA

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FIELDS OF SPECIALIZATION	
Molecular & Cellular Immunology Vaccinology DNA Profiling	
CURRENT R & D INTERESTS	
1.	Development of vaccines against tuberculosis
2.	Regulation of the immune response via the activity of transcription factors in selected subsets of T cells
3.	Mechanism of cancer cell death
4.	DNA profiling – Short Tandem Repeats (STR), Y-STRs, mitochondrial typing, HLA typing
5.	Development of Halal Meningococcal & Typhoid Vaccines
6.	Development of Diagnostics for Infectious Diseases

EMPLOYMENT HISTORY

1. Technical Officer, Flinders Medical Centre, South Australia, 1989
2. Research/Postdoctoral Fellow, University of Surrey (1995 [whole year]; July 1996 – March 1997)
3. Senior Vice President (Strategy and Planning), Malaysian Biotechnology Corporation, April 2006 to August 2008

The Malaysian Biotechnology Corporation (BiotechCorp) is responsible for spearheading the development of the Biotechnology Industry in Malaysia. The Strategy & Planning Division of BiotechCorp is primarily responsible for creating a conducive environment for the development of the biotechnology industry in the country by enhancing the capability and capacity of our human capital requirements, legal & regulatory landscape, financial, and technology infrastructures to help nurture local biotechnology companies as well as to attract foreign biotechnology companies into the country
4. Lecturer - Professor, Universiti Sains Malaysia, 1990 – present

MEMBERSHIP OF PROFESSIONAL SOCIETIES

1. Postgraduate Student Member, 1987 – 1989, Australia Society for Immunology
2. Associate Member, 1991 – 1992, Royal College of Pathologists, UK
3. Life Member, from 1993, Malaysian Society for Molecular Biology & Biotechnology
4. Member, 1996 – 1999, New York Academy of Sciences
5. Member, 2000 – 2009, American Association for the Advancement of Science
6. Associate Editor, Asia Pacific Journal of Molecular Biology and Biotechnology, 2002 – present
7. Lead Auditor, Moody's International, ISO9001, 2000, March 2005
8. Member, International Society for Vaccines ISV Number: 2008MN10166, 2008 – present
9. Member, Academy of Sciences Malaysia Task Force on Emerging Infectious Diseases, February 2011 - present

SCIENTIFIC / ACADEMIC BOOKS / CHAPTER(S) IN BOOK

1. **Norazmi MN** (1996). "(HIV and AIDS: Immunological Aspects)" Chapter 10 in "AIDS: An Integrated Approach in Malaysia" ed. Rosli Nordin, *Dewan Bahasa & Pustaka, Kuala Lumpur*
2. **Norazmi MN** (1996). Potential use of recombinant BCG as a malarial vaccine, *Proc. of the Seminar on Commercialization of Malaysian R&D, Volume 1: 135 – 140*
3. Mohd Ariffin K, Yaacob NS, **Norazmi MN** (2002). The involvement of the nuclear receptor peroxisome proliferator-activated receptor gamma (PPAR γ) in experimental Type-1 diabetes. *Proc. of the Annual Seminar National Science Fellowship, 54 – 57*
4. **Norazmi MN** (2003). "Superjaguh: Our Body's Defence Mechanisms" (Bahasa Malaysia) *Dewan Bahasa & Pustaka, Kuala Lumpur*
5. Halisa MD, Yaacob NS, **Norazmi MN** (2004). Ciglitazone inhibits growth and induces apoptosis in human colorectal cancer cell lines independent of PPAR γ . *Proc. of the Fourth National Science Fellowship Seminar, 20 – 21 December, pp 1-6*
6. **Norazmi MN** (2005). e-Book "Imunopatogenesis, pemantauan dan klasifikasi jangkitan HIV dan penyakit AIDS (Immunopathogenesis, monitoring and classification of HIV/AIDS)", *Dewan Bahasa & Pustaka, Kuala Lumpur*
7. Majid Z, Lim A, Arif J, Samsuddin AR, Nizam A., Zafarina Z, **Norazmi MN** (2005). Chapter 12: Niah 1977: A Skeleton with Bilateral Absent Radius in "The Perak Man", ed. Zuraina Majid, *USM Publisher*
8. Yaacob NS, Khoo BY, Halisa MD **Norazmi MN** (2006): Modulation of cell growth and PPAR γ expression in HT-29 cell line by indomethacin and ciglitazone. *Fundamental Research in USM, Life Sciences Research Vol. 3: 37 – 40*, ed. AA Tajuddin, *USM Publisher*
9. Shamsuddin S, Yaacob NS, **Norazmi MN** (2006). Characterisation of the transcription factor, CTCF and YB-1 in the cervical cancer cell line, HeLa. *Fundamental Research in USM, Life Sciences Research Vol. 3: 47 – 55*, ed. AA Tajuddin, *USM Publisher*
10. Mahamud R, **Norazmi MN** (2006). Evaluation of the immunological mechanisms by recombinant bacille Calmette-Guerin (rBCG) clone expressing T and B cell epitopes of *Mycobacterium tuberculosis*. *Fundamental Research in USM, Life Sciences Research Vol. 2: 107 – 111*, ed. eds. Tajuddin AA & Lim KO, *USM Publisher, (ISBN 983-861-320-7)*
11. Mohamad R, Khairil-Anuar MI, Yaacob NS, **Norazmi MN** (2006). The expression of PPAR γ 1 in CD4 $^{+}$ and CD8 $^{+}$ T lymphocytes. *Fundamental Research at USM 2002-2005, Vol 2 (Life Sciences): 147 – 153*, eds. Tajuddin AA & Lim KO, *USM Publisher, (ISBN 983-861-320-7)*

SCIENTIFIC / ACADEMIC BOOKS / CHAPTER(S) IN BOOK

12. Yaacob NS, **Norazmi MN** (2006). Mechanism of PPAR γ -induced apoptosis in MDA-MB-231 and MCF-7 breast cancer cell lines. Buku Profil Penyelidikan FRGS Fasa 1/2006 (under the Ministry of Higher Education)
13. Zakaria R, Yaacob NS, **Norazmi MN** (2010). Insulin-like growth factors and diabetic embryopathy, *Lambert Academic Publishing*
14. Cataldi A, Bigi F, **Norazmi MN**, Sarmiento ME, Acosta A (2010). Strategies for new generation vaccine development in "The Art and Science of Tuberculosis Vaccine Development" Chapter 12, *Norazmi et al (ed), Oxford Fajar*
15. **Norazmi MN** (2011). APEX 2010: Ensuring a sustainable tomorrow 2010 – Laying the Foundation. "A "halal", affordable meningococcal ACYW-135 vaccine for haj and umrah pilgrims and the bottom billions, *USM Publisher, (ISBN: 978-983-861-459-7)*
16. **Norazmi MN** (2011). APEX 2010: Ensuring a sustainable tomorrow 2010 – Laying the Foundation. "The Art and Science of Tuberculosis Vaccine Development", *USM Publisher, (ISBN: 978-983-861-459-7)*
17. Dhaniah M, Rapeah S, NurulSyuhada O, Nurul AA, **Norazmi, MN** (2010) Lipopolysaccharide modulates nitric oxide, inducible nitric oxide synthase and IL-12 production in mouse macrophage cell line infected with BCG and rBCG expressing the MSP1-C of *Plasmodium falciparum*. *Proceedings of the National Postgraduate Seminar 2010, pp 20-24 (ISBN 978-967-5878-34-3)*
18. Nurul AA, **Norazmi MN** (2011). Malaria vaccine development: A recombinant BCG-based vaccine expressing blood-stage antigens of *Plasmodium falciparum*. *Lambert Academic Publishing. 180 pg. ISBN: 972-3-8443-0486-2*
19. Yaacob NS, **Norazmi MN** (2011). Peroxisome proliferator-activated receptors: Nuclear receptors with pleiotropic actions. In: "Nuclear Receptors", Bates and Kerr (eds.) *Nova Science Publishers, Inc. ISBN: 978-1-61209-980-4*
20. Acosta A, López Y, **Norazmi MN**, Alvarez N, Sarmiento ME (2011). Towards a new challenge in TB control: Development of antibody-based protection in "*Mycobacterium tuberculosis* / Book 3", *InTech Open Access Publisher ISBN 979-953-307-698-9*
21. Panneerchelvam S, **Norazmi MN** (2012). HLA polymorphism in Anthropology, *In Tech Open Access Publisher (under review)*

SCIENTIFIC JOURNALS

1. **Norazmi MN**, Hohmann AW, Skinner JM, Bradley J (1989). Expression of MHC class I and class II antigens in colonic carcinoma. *Pathology* **21**: 248 – 253
2. **Norazmi MN**, Hohmann AW, Skinner JM, Bradley J (1989). Expression of MHC class II, interleukin 2 receptor and CD45 antigens on tumour-associated T lymphocytes in colonic carcinoma. *Br J Cancer* **60**: 685 – 687
3. **Norazmi MN**, Hohmann AW, Skinner JM, Bradley J (1990). Density and phenotype of tumour-associated mononuclear cells in colonic carcinoma determined by computer-assisted video image analysis. *Immunology* **69**: 282 – 286
4. **Norazmi MN**, Hohmann AW, Bradley J (1990). Influence of interferon-gamma on the expression of MHC class I and class II antigens on four human colonic carcinoma cell lines. *Malays J Pathol* **12**(2): 89 – 95.
5. **Norazmi MN**, Hohmann AW, Jarvis LR, Stoll P, Skinner JM, Bradley J (1990). The use of computer-assisted video image analysis in the enumeration of immuno-stained cells in tissue sections. *J Immunol Methods* **131**: 223 – 227
6. **Norazmi MN** (1991). Culture supernatants of human colonic carcinoma cell lines suppressed lymphocyte blastogenesis. *Diagnosa* **5**(2): 29 – 37
7. **Norazmi MN**, Hohmann AW, Skinner JM, Bradley J (1992). Mononuclear cells in normal colon and colonic carcinoma expressed the same T cell activation markers. *Exp Toxicol Pathol* **44**(4): 214 – 216
8. **Norazmi MN**, Suarn S (1994). Disparity in the percentage of CD4+ T lymphocytes and prognosis of HIV-infected intravenous drug users. *Immunol Lett* **43**(3): 177 – 182
9. **Norazmi MN**, Arifin H, Jamaruddin MA, Normah J (1994). Alterations in the expression of T-cell activation markers during acute falciparum malaria infection. *AsP J Mol Biol Biotech* **2**(3): 211 – 216
10. **Norazmi MN**, Arifin H, Jamaruddin MA (1995). Increased level of activated $\gamma\delta$ lymphocytes correlates with disease severity in HIV-infection. *Immunol Cell Biol* **73**: 245 - 248
11. **Norazmi MN**, Jamaruddin MA, Arifin H (1995). Expression of the T lymphocyte activation markers, CD25, HLA-DR, CD38 and memory cell marker, CD45RO, on the CD4+, CD8+ and $\gamma\delta$ + lymphocyte subsets in HIV-infected intravenous drug users. *AsP J Mol Biol Biotech* **3**(2): 119 – 129
12. Dasgupta A, **Norazmi MN**, Jamaruddin MA, Jack son N (1995). Incidence and cell surface immunophenotype of acute leukaemias in Kelantan. *AsP J Mol Biol Biotech* **3**(2): 130 – 134

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13. **Norazmi MN**, Peakman M, Vergani D, Baum H (1995). Shared amino acid sequences between glutamic acid decarboxylase 65 and 67 and alpha-2-macroglobulin. A focus for cross-reactive autoantibodies? *Diabetologia* **38**: 874 – 875
14. Baum H, Peakman, M, **Norazmi MN**, Vergani D (1996). Molecular mimicry and the T-cell repertoire. *Diabetologia* **39**: 246 – 247
15. **Norazmi MN** (1996). Three known variants of the C-terminus of the *Plasmodium falciparum* merozoite surface protein 1 are present in a single holoendemic village in Sabah, Malaysia. *AsP J Mol Biol Biotech* **4(1)**: 136 – 139
16. **Norazmi MN**, Kano S, Alias A, Abdullah MS, Suzuki M (1996). Reactivity of sera from patients with acute *Plasmodium falciparum* and *P. vivax* infections with an antigen preparation from a *P. falciparum* isolate: Mutually exclusive reactivity with a 47kD and 29kD band respectively. *Japan J Trop Med Hyg* **24(4)**: 237 – 239
17. Yaacob NS, **Norazmi MN**, Kass G, Gordon GG (1997). Use of competitive RT-PCR in the molecular analysis of peroxisome proliferation. *Eur J Drug Metab Pharmacol* **22(4)**: 321 - 324
18. **Norazmi MN**, Dale J (1997). Cloning and expression of a candidate malarial epitope in bacille Calmette Guerin. *Biotech Lett* **19**: 1135 – 1137
19. Taufeeq Khan TF, **Norazmi MN** (1998). Recurrent pyogenic cholangitis. Is immune depression a feature? *Tropical Doctor* **187**
20. **Norazmi MN**, Zainuddin ZF, Suppian R, Dale J (1999). The use of assembly polymerase chain reaction for cloning of a malarial epitope into *Mycobacterium smegmatis* – importance of overcoming codon bias. *Biotech Techniques* **13**: 485 –489
21. Yaacob NS, **Norazmi MN** (2000). Influence of extracellular calcium on the transcription of peroxisome proliferator-activated receptor alpha (PPAR α) and acyl coenzyme A oxidase. *AsP J Mol Biol Biotech* **8(1)**: 67 – 72
22. Yaacob NS, **Norazmi MN** (2000). Differential effects of peroxisome proliferators on the transcription of the peroxisome proliferator-activated receptor alpha and acyl coenzyme A oxidase. *Malays J Biochem Mol Biol* **5**: 5 – 9
23. Yaacob NS, **Norazmi MN**, Gibson GG, Kass GEN (2001). The transcription of the peroxisome proliferator-activated receptor α gene is regulated by protein kinase C. *Toxicol Lett* **125**: 133 – 141
24. **Norazmi MN** (2001). Possible mechanism for the enhanced lethality of an IL-4-expressing mousepox virus. *J Med Microbiol* **50**: 936

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25. Panneerchelvam S, Haslindawaty AR, Ravichandran M, **Norazmi MN**, Zainuddin ZF (2003). Allele frequency distribution for 10 STR loci in the Malay population of Malaysia. **J Forensic Sci 48: 451 – 452**
26. Panneerchelvam S, **Norazmi MN** (2003). Forensic DNA profiling and database. **Malay J Med Sci 10: 20 – 26**
27. Othman MI, Seah LH, Panneerchelvam S, **Norazmi MN** (2004). Allele frequencies for the Powerplex™ 16 STR loci in Javanese population in Malaysia. **J Forensic Sci 49: 190 – 191**
28. Panneerchelvam S, Kumara Thevan K, Lai KF, Saravanakumar M, Sumathy V, Yuvaneswari KC, **Norazmi MN** (2004). Allele frequency distribution for 9 STR loci in the Tamil population of Malaysia. **J Forensic Sci 49: 863 – 864**
29. Yaacob NS, Kaderi MA, **Norazmi MN** (2004). The expression of cytokine genes in the peritoneal macrophages and T lymphocytes of the non-obese diabetic mice. **J Clin Immunol 24(2): 177 – 184**
30. Low JH, Raju SS, Abdullah MS, **Norazmi MN**, Ravichandran M (2004). Rifampicin antagonizes the effect of chloroquine on chloroquine-resistant *Plasmodium berghei* in mice. **Jpn J Infect Dis 57: 198-202**
31. Yaacob NS, Abu Bakar R, **Norazmi MN** (2004). Human PPAR γ gene quantification by competitive PCR using homologous internal standard. **Ann Clin Lab Sci 34 (1): 47 – 54**
32. **Norazmi MN**, Musa M (2004). Approaches towards the development of a vaccine against tuberculosis: recombinant BCG and DNA vaccine. **Tuberculosis 84: 102 – 109**
33. Panneerchelvam S, Kumara Thevan K, Lai KF, Saravanakumar M, Sumathy V, Yuvaneswari KC, **Norazmi MN** (2004). Polymorphism of 9 STRs in Ethnic Chinese Population of Malaysia. **J Forensic Sci 49: 1132 – 1133**
34. Tan CT, Sam CK, Badruddin N, Panneerchelvam S, **N orazmi MN** (2005). Autosomal STR polymorphism in Sikh population of Peninsular Malaysia. **J Foren Sci 50(5): 1223 – 1224**
35. Othman MI, Seah LH, Panneerchelvam S, **Norazmi MN** (2005). STR Data for the PowerPlex 16 System loci for the Malays, Chinese and Indian groups of the Malaysian population. **J Forensic Sci 50(5): 1225 – 1228**
36. Sarhan MAA, Musa M, **Norazmi MN**, Zainuddin ZF (2005). Synthesis of the N-terminal of the ice nucleation protein gene of *Pseudomonas syringae* by assembly PCR. **Biotechnology 4(3): 187 – 193**

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37. **Norazmi MN**, Sarmiento M, Acosta A (2005). Recent advances in tuberculosis vaccine development. ***Curr Resp Med Rev* 1: 109 – 116**
38. Rapeah S, **Norazmi MN** (2006). Immunogenicity of a recombinant *Mycobacterium bovis* bacille Calmette-Guerin expressing malarial and tuberculosis epitopes. ***Vaccine* 24: 3646 – 3653**
39. Tuladhar BS, Haslindawaty AR, Nada B, Panneerchelvam S, **Norazmi MN**. (2006). Allele frequency data for nine STRs polymorphism in a Gurkha population of Malaysia. ***J Forensic Sci* 51: 1205 – 1206**
40. Rapeah S, Zainuddin ZF, **Norazmi MN** (2006). Cloning and expression of malarial and tuberculosis epitopes in *Mycobacterium bovis* bacille Calmette-Guerin. ***Malays J Med Sci* 13(1): 13 – 20**
41. Olivares N, Vila A, Moya A, Sarmiento ME, Acosta A, **Norazmi MN** (2006). Role of antibodies in protecting against *Mycobacterium tuberculosis*. ***Vaccimonitor* 15: 15 – 20 (Spanish)**
42. Khairul MF, Min TH, Low JH, Nasriyyah CH, A'shikin AN, Norazmi MN, Ravichandran M, Raju SS (2006). Fluoxetine potentiates chloroquine and mefloquine effect on multidrug-resistant *Plasmodium falciparum* in vitro. ***Jpn J Infect Dis* 59: 329 – 331**
43. Garcia MdIA, Sarmiento ME, Coria R, Kawasaky L, Ongay L, de la Rosa JF, **Norazmi MN**, Acosta A (2007). Heterologous expression of a B-cell multiepitopic peptide from *M. tuberculosis* in *Saccharomyces cerevisiae*. ***VacciMonitor* 16: 21 – 25 (Spanish)**
44. Fang CM, Zainuddin ZF, Musa M, **Norazmi MN**, Thong KL (2007). Evaluation of the delivery modes and their effects on the antigenicity properties of a synthetic multivalent mycobacterial gene in mice. ***AsP J Mol Biol Biotech* 15(2): 69 – 79**
45. Zakaria R, Rajikin MH, Yaacob NS, **Norazmi MN** (2007). Diabetes alters the mRNA expression of insulin-like growth factors and their receptors in the mouse fallopian tube and uterus during preimplantation stages. ***Reproductive Biol.* 7: 41 – 54**
46. Min TH, Khairul MF, Low JH, Che Nasriyyah CH, A'shikin AN, Norazmi MN, Ravichandran M, Raju SS (2007). Roxithromycin potentiates the effects of chloroquine and mefloquine on multidrug-resistant *Plasmodium falciparum* in vitro. ***Exp Parasitol* 115: 387 – 392**
47. Alvarez N, Borrero R, Garcia MdIA, Martinez I, Acosta M, Padron MdIA, Echemendia M, Montoro E, **Norazmi MN**, Sarmiento ME, Acosta A (2008). Obtainment and partial characterization of a lipidic fragment of the outer membrane of *Mycobacterium smegmatis*. ***VacciMonitor* 18: 15 – 19 (Spanish)**

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48. Yaacob NS, Mohd Darus H, **Norazmi MN** (2008). Modulation of cell growth and PPAR γ expression in human colorectal cancer cell lines by ciglitazone. *Exp Toxicol Pathol* **60(6)**: 505 – 512
49. Yaacob NS, Kaderi MA, **Norazmi MN** (2009). Differential transcriptional expression of PPAR α , PPAR γ 1 and PPAR γ 2 in the peritoneal macrophages and T cell subsets of non obese diabetic mice. *J Clin Immunol* **29**: 595 – 602
50. Zakaria R, Rajikin MH, Yaacob NS, **Norazmi MN** (2009). Expression of insulin-like growth factors and their receptors in the diabetic mouse oviduct and uterine tissues during preimplantation period using immunohistochemistry. *Acta Histochemica* **111**: 52 – 60
51. Olivares N, Puig A, Aguilar D, Moya A, Cádiz A, Otero O, Izquierdo L, Falero G, Solis RL, Orozco H, Sarmiento ME, **Norazmi MN**, Hernández-Pando R, Acosta A (2009). Prophylactic effect of administration of human gamma globulins in a mouse model of tuberculosis. *Tuberculosis* **89(3)**: 218 – 220
52. Álvarez N, Borrero R, Reyes F, Camacho F, **Norazmi MN**, Sarmiento ME, Acosta A (2009). Mechanisms of evasion and persistence of *Mycobacterium tuberculosis* during the latency state and potential strategies to control latent infection. *VacciMonitor Vol. 18(3)*: 18 – 25
53. Edinur HA, Zafarina Z, Spínola H, Nurhaslindawaty AR, Panneerchelvam S, **Norazmi MN** (2009). HLA polymorphism in six Malay sub-ethnic groups in Malaysia. *Human Immunol* **70**: 518 – 526
54. Rapeah S, Dhaniah M, Nurul AA, **Norazmi MN** (2010). Phagocytic activity and pro-inflammatory cytokines production by the murine macrophage cell line J774A.1 stimulated by a recombinant BCG (rBCG) expressing the MSP1-C of *Plasmodium falciparum*. *Trop Biomed* **27(3)**: 461 – 469
55. Nurhaslindawaty AR, Panneerchelvam S, Edinur HA, **Norazmi MN**, Zafarina Z (2010). Sequence polymorphism of mtDNA HV1, HV2 and HV3 regions in the Malay population of Peninsular Malaysia. *Int J Legal Med* **124(5)**: 415 – 426
56. Yaacob NS, Hamzah N, Nik Mohamed Kamal NNS, Zainal Abidin SA, Lai CS, Navaratnam V, **Norazmi MN** (2010). Anticancer activity of a sub-fraction of dichloromethane of *Strobilanthes crispus* on human breast and prostate cancer cells *in vitro*. *BMC Compliment Altern Med* **10**: 42
57. Álvarez N, Otero O, Falero G, Cádiz A, Marcet R, Carbonell AE, Sarmiento ME, **Norazmi MN**, Acosta A (2010). Purification of secretory immunoglobulin A from human colostrum. *VacciMonitor* **19(3)**: 26 – 29 (Spanish)
58. Nurul AA, Rapeah S, **Norazmi MN** (2010). *Plasmodium falciparum* 19 kDa of merozoite surface protein-1 (MSP-1₁₉) expressed in *Mycobacterium bovis* bacille Calmette Guérin (BCG) is reactive with an inhibitory but not a blocking monoclonal antibody. *Trop Biomed* **27(1)**: 60 – 67

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59. Acosta A, **Norazmi MN**, Sarmiento ME (2010). Antibody mediated immunity — a missed opportunity in the fight against tuberculosis? *Malays J Med Sci.* **17(2): 66 – 67**
60. Nguyen Thi LT, Maura RB, Fernandez S, Reyes G, Perez JL, Reyes F, Garcia MdA, Farinas M, Infante JF, Tirado Y, Puig A, Sierra G, Alvarez N, Ramirez JC, Sarmiento ME, **Norazmi MN**, Acosta A (2010): Evaluation of the potential of *Mycobacterium smegmatis* as vaccine candidate against tuberculosis by *in silico* and *in vivo* studies. *VacciMonitor* **19(1): 20 – 26**
61. Fauzi AN, **Norazmi MN**, Yaacob NS (2011). Tualang honey induces apoptosis and disrupts the mitochondrial membrane potential of human breast and cervical cancer cell lines. *Food Chem Toxicol* **49(4): 871 – 878**
62. Nurul AA, **Norazmi MN** (2011). Immunogenicity and *in vitro* protective efficacy of recombinant *Mycobacterium bovis* bacille Calmette Guerin (rBCG) expressing the 19 kDa merozoite surface protein-1 (MSP-1₁₉) antigen of *Plasmodium falciparum*. *Parasitol Res* **108: 887 – 897**
63. Rodriguez L, Tirado Y, Reyes F, Puig A, Kadir R, Borrero R, Fernandez S, Reyes G, Alvarez N, Garcia MA, Sarmiento ME, **Norazmi MN**, Perez Quinoy JL, Acosta A. (2011). Proteoliposomes from *Mycobacterium smegmatis* induce immune cross-reactivity against *Mycobacterium tuberculosis* antigens in mice. *Vaccine* **29(37): 6236 – 6241**
64. Yaacob NS, Goh KSK, **Norazmi MN** (2012). Male and female NOD mice differentially express peroxisome proliferator-activated receptors and pathogenic cytokines. *Exp Toxicol Pathol* **64: 127 – 131**

SCIENTIFIC JOURNALS – under Revision, Submitted, In Preparation

Manuscripts being revised / submitted / in preparation

65. Teo WH, Nurul AA, **Norazmi MN**. Immunogenicity of recombinant BCG-based vaccine expressing 22 kDa of serine repeat antigen (SE22) of *Plasmodium falciparum*. **Trop Biomed (under revision)**
66. **Norazmi MN**, Mohamed R, Nurul AA, Yaacob NS. The modulation of PPAR γ 1 and PPAR γ 2 mRNA expression by ciglitazone in CD3/CD28-activated naïve and memory CD4 $^{+}$ T cells. **Clin Dev Immunol (submitted)**
67. Suppian R, **Norazmi MN**. Induction of an antibody response against F2RIIEBA of *Plasmodium falciparum* by heterologous prime-boost immunization. **Trop Life Sci Res (submitted)**
68. Dhaniah M, Rapeah S, **Norazmi MN**. Immunomodulatory effects of a recombinant BCG expressing the MSP-1C of *Plasmodium falciparum* on LPS-stimulated J774A.1 cells. **(Intended for Parasite Immunol)**
69. Nguyen Thi LT, Sarmiento ME, **Norazmi MN**, Gustavo Sierra Gonzales GS, Acosta A. Focusing on highly expressed *Mycobacterium tuberculosis* proteins during different stages of infection for developing new vaccine against tuberculosis. **(Intended for BMC Bioinformatics)**
70. Allia S, Panneerchelvam S, Zafarina Z, **Norazmi MN**. Human leukocyte antigen polymorphism of five Malay sub-ethnic groups in Peninsular Malaysia. **(Intended for Human Immunol)**
71. Mohamud R, Azlan M, Olivares N, Puig A, Vila A, Yero D, Alvarez N, Aguilar D, Hernandez-Pando R, Sarmiento ME, Acosta A, **Norazmi MN**. Efficacy of recombinant BCG clones expressing T and B cell epitopes of *M. tuberculosis* antigens.
72. Nguyen Thi LT, Sarmiento ME, **Norazmi MN**, Gonzales GS, Acosta A. A new model of studying *Mycobacterium smegmatis* for developing new vaccines against tuberculosis using bioinformatics tools

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

1. Norazmi MN, Hohmann AW, Skinner JM, Bradley J. Expression of HLA-D region gene products (DR, DP, DQ) on T cells following *in vitro* stimulation. Sixteenth Annual Meeting, Australian Society for Immunology, Newcastle, 3 - 5 December, 1986.
2. Norazmi MN, Hohmann AW, Skinner JM, Bradley J. Detection of T cell markers in frozen tissue sections is inhibited by methanol fixation. Seventeenth Annual Meeting, Australian Society for Immunology, Canberra, 9 - 11 February, 1988.
3. Norazmi MN, Hohmann AW, Skinner JM, Bradley J. Expression of MHC class I and class II antigens in colonic carcinoma. Seventeenth Annual Meeting, Australian Society for Immunology, Canberra, 9 - 11 February, 1988.
4. Norazmi MN, Dale J. Cloning and expression of a *Plasmodium falciparum* DNA fragment containing the region II of CSP in *M. bovis* (BCG). XIVth International Congress of Tropical Medicine, Nagasaki, Japan, 17 - 22 November, 1996.
5. Norazmi MN, Dale J. Bacille Calmette Guerin (BCG). A potential vehicle for vaccine delivery. Joint Scientific Meeting of the Malaysian Society for Immunology and Malaysian Society of Rheumatology. Pan Pacific Hotel, Kuala Lumpur, 2 April, 1996. (*won Best Oral Presentation*)
6. Norazmi MN, Zainuddin ZF. Potential use of recombinant BCG as a malarial vaccine. Seminar on Commercialisation of Malaysian R&D, Dewan San Choon, Wisma MCA, Kuala Lumpur, 15 - 18 August, 1996.
7. Musa M, Nazmi MN, Jamaruddin MA, Asma HA, Nik Faizah H, Norazmi MN. Assessment of the expression of CD8 T lymphocyte activation markers in HIV infected intravenous drug users using 3 colour immunoflow cytometry. Third National Conference on Medical Sciences USM Medical School, Kelantan, Malaysia, 25 - 26 May 1997.
8. Yaacob NS, Norazmi MN, Kass G, Gordon GG. Use of competitive RT-PCR in the molecular analysis of peroxisome proliferation. Symposium on Drug Metabolism: Towards the next millennium. King's College, London, United Kingdom, 26 - 28 August, 1997.
9. Yaacob NS, Kass G, Norazmi MN, Gibson G. Role of protein kinase C in peroxisome proliferation. Symposium on Drug Metabolism: Towards the next millennium., King's College, London, United Kingdom 26 - 28 August 1997
10. Yaacob NS, Norazmi MN, Gordon GG, Kass GEN. The influence of Ca^{2+} in the regulation of peroxisome proliferator-activated receptor alpha (PPAR α) transcription and function. Fourth National Conference in Medical Sciences, School of Medical Sciences, Universiti Sains Malaysia. 8 - 9 June, 1998.

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

11. Yaacob NS, Norazmi MN. Phosphorylation of the peroxisome proliferator activated receptor alpha. 5th. National Conference of Medical Sciences, Universiti Sains Malaysia, 4-5 May, 1999 (*won best poster presentation for Basic Science*)
12. Norazmi MN, Suppian R, Zainuddin ZF. Cloning of a malarial epitope into *Mycobacterium smegmatis* using assembly PCR. 5th. National Conference of Medical Sciences, Universiti Sains Malaysia, 4-5 May, 1999
13. Menon BS, Maziah WM, Jamaruddin MA, Norazmi MN. Immunophenotyping paediatric acute lymphoblastic leukemia (ALL), 3rd. Scientific Meeting, Malaysian Society for Immunology, School of Medical Sciences, Universiti Sains Malaysia, 8 August, 1999
14. Yaacob NS, Norazmi MN. Anomaly between the actions of peroxisome proliferators on PPAR α transcription and function. 6th. National Conference of Medical Sciences, Universiti Sains Malaysia, 10-11 May, 2000. (*won best poster presentation for Basic Science*)
15. Yaacob NS, Norazmi MN. The involvement of protein kinase C in peroxisome proliferator activated alpha and acyl co-enzyme A oxidase signal transduction. 4th. UNESCO-MCBN/COSTAM/SFRR (ASIA/ASEAN) Workshop on Micronutrients and Health: Molecular Biological Mechanisms, Langkawi Berjaya Resort, 27 – 30 July, 2000. (*won best poster award*)
16. Yaacob NS, Norazmi MN. Transcriptional activation of PPAR α is not reflective of its functional activation. 11th. Malaysian Society of Molecular Biology and Biotechnology Meeting, Hyatt Regency Saujana Hotel, Subang, Kuala Lumpur, 14 – 16 May, 2001
17. Suppian R, Norazmi MN. The use of assembly PCR to clone different malarial epitopes into *Mycobacterium bovis* BCG. First ASEAN Conference on Medical Sciences, Renaissance Hotel Kota Bharu, 18 - 21 May, 2001
18. Ruzilawati AB, Kaderi MA, Norazmi MN, Yaacob NS. Development of homologous internal standards for the quantitation of hPPAR γ and mPPAR γ using competitive PCR. . First ASEAN Conference on Medical Sciences, Renaissance Hotel Kota Bharu, 18 - 21 May, 2001
19. Zakaria R, Abdul Halim A, Mastuki Y, Normaznah Y, Norhissyam Y, Norazmi MN. Cloning of the C terminus of *Plasmodium berghei* merozoite surface protein-1 (PbMSP-1C) into bacille Calmette Guerin (rBCG). First ASEAN Conference on Medical Sciences, Renaissance Hotel Kota Bharu, 18 - 21 May, 2001
20. Yaacob NS, Norazmi MN. PPAR γ in macrophage activation. Workshop on free radicals and health, Equatorial Hotel, Kuala Lumpur, 5 September 2001
21. Kaderi MA, Zulkarnain M, Yaacob NS, Norazmi MN. Interleukin-6: A 'double-agent' in insultitis. Eighth National Conference of Medical Sciences. Universiti Sains Malaysia, Kota Bharu, 8-9 May, 2003

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

22. Abu Bakar R, Yaacob NS, Norazmi MN. Expression of PPARs in immune cells. Eighth National Conference of Medical Sciences. Universiti Sains Malaysia, Kota Bharu, 8 – 9 May, 2003
23. Khoo BY, Halisa MD, Yaacob NS, Norazmi MN. Cytotoxic effects of indomethacin and ibuprofen on human colorectal carcinoma cell lines. 13th. Scientific Meeting of the Malaysian Society of Molecular Biology and Biotechnology on 'Biotechnology: The Fourth Revolution', Putrajaya Marriott Hotel, Putrajaya, Kuala Lumpur, 19 –21 May, 2003
24. Halisa MD, Khoo BY, Yaacob NS, Norazmi MN. Growth inhibition of HT-29 and COLO 205 cell lines by peroxisome proliferator-activated receptor- γ ligands. 28th Annual Conference of The Malaysian Society for Biochemistry and Molecular Biology, Putrajaya Marriott Hotel, Putrajaya, Kuala Lumpur, 12 August, 2003
25. Norazmi MN, Musa M, Zainuddin ZF. Molecular approaches towards the development of vaccines against malaria and tuberculosis. The Public Institutions of Higher Learning (IPTA) R&D exposition, Putra World Trade Centre, Kuala Lumpur, 9 – 10 October, 2003
26. Khoo BY, Halisa MD, Yaacob NS, Norazmi MN. Downregulation of PPAR γ mRNA expression in human colorectal cancer cell lines by the receptor ligands. Malaysian Society of Molecular Biology and Biotechnology Scientific Meeting on 'Advancement of Biotechnology: Consolidating the strength and resources towards globalisation', Century Mahkota Hotel, Melaka, 19 – 21 July 2004
27. Halisa MD, Yong KF, Norazmi MN, Yaacob NS. Induction of apoptosis in human colorectal cancer cell lines by ciglitazone. 29th Annual Conference of the Malaysian Society for Biochemistry and Molecular Biology on 'Biochemistry and Bioinformatics in the 21st Century: New Dimensions and Challenges'. Nikko Hotel, Kuala Lumpur, 28 – 29 September, 2004
28. Zulkarnain M, Yaacob NS, Norazmi MN. Retinoic X receptor mRNA expression in the splenic T lymphocytes of non-obese diabetic mouse. 29th Annual Conference of the Malaysian Society for Biochemistry and Molecular Biology on 'Biochemistry and Bioinformatics in the 21st Century: New Dimensions and Challenges'. Nikko Hotel Kuala Lumpur, 28 – 29 September, 2004
29. Rafeezul M, Yaacob NS, Norazmi MN. TGF- β cytokine gene expression in non-activated naïve and memory CD4⁺ T cell subsets. 29th Annual Conference of the Malaysian Society for Biochemistry and Molecular Biology on 'Biochemistry and Bioinformatics in the 21st Century: New Dimensions and Challenges'. Nikko Hotel, Kuala Lumpur, 28 – 29 September, 2004
30. Anas SS, Norazmi MN, Yaacob NS. Modulation of PPAR γ expression and apoptosis by ciglitazone in MCF-7 cells. 29th Annual Conference of the Malaysian Society for Biochemistry and Molecular Biology on 'Biochemistry and Bioinformatics in the 21st Century: New Dimensions and Challenges'. Nikko Hotel, Kuala Lumpur, 28 – 29 September, 2004

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

31. Nurul AA, Norazmi MN. A recombinant BCG expressing the 19kDa C-terminus of merozoite surface protein-1 (MSP-1C) of *Plasmodium falciparum* reacts with an inhibitory but not a blocking monoclonal antibody. 29th Annual conference of the Malaysian Society for Biochemistry and Molecular Biology. Nikko Hotel. 28th-29th September 2004
32. Yaacob NS, Halisa MD, Norazmi MN. The possible role of PPAR γ in cervical cancer. First National Scientific Meeting on Cervical Cancer, , USM Health Campus, Kelantan, 3 – 4 October 2004
33. Kaderi MA, Norazmi MN, Yaacob NS. The Expression of Peroxisome Proliferator-activated Receptor Alpha (PPAR- α) in Immune Cells of the Non-obese Diabetic (NOD) mice. . 17th FAOBMB Symposium / 2nd IUBMB Special Meeting / 7th A-IMBN Conference on Genomics and Health in the 21st Century. The Imperial Queen's Park Hotel, Bangkok, Thailand, 22 – 26 November, 2004 (*won best poster presentation*)
34. Halisa MD, Yaacob NS, Norazmi MN. Ciglitazone inhibits growth and induces apoptosis in human colorectal cancer cell lines independently of PPAR γ . Fourth Annual Seminar of National Science Fellowship, Vistana Hotel, Pulau Pinang, 20 – 21 December, 2004.
35. Rafeezul M, Yaacob NS, Norazmi MN. Naïve and memory CD4 T cells differ in their expression of TGF- β following CD3/CD28 co-stimulation. 10th. National Conference of Medical Sciences, Universiti Sains Malaysia, 21-22 May, 2005
36. Zakaria R, Yaacob NS, Rajikan MH, Norazmi MN. The role of insulin-like growth factor-1 in diabetic embryopathy. 10th. National Conference of Medical Sciences, Universiti Sains Malaysia, 21-22 May, 2005
37. Halisa MD, Jamaruddin MA, Norazmi MN, Yaacob NS. The effects of 15-deoxy- $\delta^{12,14}$ prostaglandin J₂ on cell growth and apoptosis induction in HeLa cells. 10th. National Conference of Medical Sciences, Universiti Sains Malaysia, 21-22 May, 2005
38. Maryam A, Norazmi MN. A plasmid DNA vaccine encoding antigen Mtb 8.4 and Ag85B as a candidate vaccine against tuberculosis. 10th. National Conference of Medical Sciences, Universiti Sains Malaysia, 21-22 May, 2005
39. Nurul AA, Norazmi MN. Immunogenicity of recombinant *Mycobacterium bovis* bacille Calmette Guerin expressing the 19kDa C-terminus of merozoite surface protein-1 (MSP-1C) in Balb/c mice. 10th. National Conference of Medical Sciences, Universiti Sains Malaysia, 21-22 May, 2005

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

40. Tan HM, Khairul MFM, Low JH, Che Nasriyyah CH, Noor A'shikin A, Norazmi MN, Ravichandran M, Raju SS. Effect of roxithromycin on chloroquine and mefloquine resistant *Plasmodium falciparum*. 10th. National Conference of Medical Sciences, Universiti Sains Malaysia, 21-22 May, 2005
41. Khairul MFM, Tan HM, Low JH, Che Noriyyah CH, Noor A'shikin A, Norazmi MN, Ravichandran M, Raju SS. Effect of fluoxetine on reversing chloroquine and mefloquine resistance in *Plasmodium falciparum*. 10th. National Conference of Medical Sciences, Universiti Sains Malaysia, 21-22 May 2005
42. Low JH, Khairul MFM, Tan HM, Che Noriyyah CH, Noor A'shikin A, Norazmi MN, Ravichandran M, Raju SS. Effect of omeprazole – chloroquine combinations on chloroquine resistant Plasmodia. 10th. National Conference of Medical Sciences, Universiti Sains Malaysia, 21-22 May, 2005
43. Noor A'shikin A, Che Noriyyah CH, Khairul MFM, Tan HM, Norazmi MN, Raju SS, Ravichandran M. Expression of human MDR1 in an outer membrane permeability mutant of *Escherichia coli*. 10th. National Conference of Medical Sciences, Universiti Sains Malaysia, 21-22 May, 2005
44. Rafeezul M, Yaacob NS, Norazmi MN. The expression of PPAR γ 1 and PPAR γ 2 in naïve and memory CD4⁺ T cells. 30th Annual Conference of the Malaysian Society for Biochemistry and Molecular Biology: Fundamental Science: The Engine of Growth for Biotechnology. Crown Plaza Mutiara Hotel, Kuala Lumpur, 6 – 7 September, 2005
45. Nurul AA, Norazmi MN. Immunogenicity of recombinant *Mycobacterium bovis* bacille Calmette Guerin expressing 19 kDa C-terminus of merozoite surface protein-1 (MSP-1C) of *Plasmodium falciparum*. New Approaches to Vaccine Development: From the bench to the field, Berlin, Germany. 8-10th September 2005
46. Kaderi MA, Yaacob NS, Norazmi MN. Expression of peroxisome proliferator-activated receptor (PPAR) isoforms and cytokines in splenic CD4⁺ lymphocytes of non-obese diabetic (NOD) mice. 18th FAOBMB Symposium on Genomics and Proteomics in Health and Agriculture hosted by Pakistan Society for Biochemistry and Molecular Biology, Lahore, Pakistan, 19 – 23 November 2005
47. Zakaria R, Yaacob NS, Rajikin MH, Norazmi MN. Influence of diabetes on the expression of IGF-2 and IGF-2R in mouse fallopian tube and uterus. 21st Scientific Meeting of the Malaysian Society of Pharmacology and Physiology (MSPP), 24 – 25 April 2006
48. Zakaria R, Yaacob NS, Rajikin MH, Norazmi MN. Protein expression of insulin-like growth factors and their receptors in the fallopian tube and uterine tissues during preimplantation embryo development in diabetic mice. 11th National Conference on Medical Sciences, 20 – 21 May 2006

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

49. Nurul AA, Norazmi MN. Immunogenicity of a recombinant *Mycobacterium bovis* bacille Calmette Guerin (BCG) expressing 19 kDa C-terminus of merozoite surface protein-1 (MSP-1C) and 47 kDa of serine repeat antigen (SERA) of *Plasmodium falciparum* in BALB/c mice. Health and Medical Sciences Conference of Penang International Postgraduate Convention. USM Penang. 24-26th May 2006
50. Khoo BY, Yaacob NS, Norazmi MN. Indomethacin and ibuprofen induced mitochondrial-dependent apoptosis in HT-29 cells. *Health and Medical Science Conference, First Penang International Postgraduate Convention*, USM Penang, 24 – 27 May 2006
51. Nasir R, Yaacob NS, Norazmi MN. Effects of prostaglandin J₂ metabolite on the expression of selected apoptotic signaling molecules in HeLa cells. *Health and Medical Science Conference, First Penang International Postgraduate Convention*, USM Penang, 24 – 27 May 2006
52. Nurul AA, Norazmi MN. Immunogenicity and protective efficacy of recombinant *Mycobacterium bovis* bacille Calmette Guerin (BCG) expressing the 19 kDa C-terminus of merozoite surface protein-1 (MSP-1C) and the 22 kDa of serine repeat antigen (SE22) of *Plasmodium falciparum*. International Parasitology Congress - ICOPA IX, Glasgow, Scotland. 6-11th August 2006
53. Nasir R, Mohd Darus H, Norazmi MN, Yaacob NS. Prostaglandin J₂ modulates the expression of apoptotic signaling molecules in HeLa cells. 9th AIMBN Conference and 16th MSMBB Scientific Meeting: From Genomics and Proteomics to Translational Initiatives, The Legend Hotel, Kuala Lumpur, 3 – 5 September 2006
54. Nasir R, Halisa MD, Norazmi MN, Yaacob NS. Modulation of peroxisome proliferators-activated receptor gamma (PPAR γ) expression in HeLa cells by Prostaglandin J₂. *International Medical and Health Congress*, USM Health Campus, Kubang Kerian, Kelantan, 25 – 28 May 2007
55. Khoo BY, Norazmi MN, Yaacob NS. The molecular mechanism of action induced by ibuprofen and indomethacin on human colorectal cancer cell lines. *International Medical and Health Congress*, USM Health Campus, Kubang Kerian, Kelantan, 25 – 28 May 2007
56. Zakaria R, Yaacob NS, Rajikin MH, Norazmi MN. The effect of diabetes mellitus on *in vitro* mouse preimplantation embryo development. *International Medical and Health Congress*, Kota Bharu, Kelantan, 25 – 28 May 2007
57. Nurul AA, Norazmi MN. Immunogenicity and *in vitro* protective efficacy of recombinant *Mycobacterium bovis* bacille Calmette Guerin (BCG) expressing the 19 kDa C-terminus of merozoite surface protein-1 (MSP-1C) and the 22 kDa of serine repeat antigen (SE22) of *Plasmodium falciparum*. Vaccine Congress– Celebrating 25 Years of Publication. Amsterdam, The Netherlands, 9-11th December 2007

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

58. Zafarina Z, Norazmi MN. Mitochondrial DNA analysis as a tool for the identification of human remains in "DNA in Forensics", Ancona, Italy, 27 – 30 May, 2008.
59. Nurul AA, Norazmi MN. Development of recombinant *Mycobacterium bovis* bacille Calmette Guerin (rBCG) expressing the 19kDa C-terminus of merozoite surface protein-1 (MSP-1C) and the 22 kDa serine repeat antigen (SE22) of *Plasmodium falciparum* as a potential blood-stage malarial vaccine. Alpbach, Austria, 7 – 13 June 2008
60. Nawi MA, Nurul AA, Norazmi MN. Construction of recombinant *Mycobacterium bovis* bacille Calmette Guerin (rBCG) encoding two predominant variants of C-terminus of merozoite surface protein-1 (MSP-1C) of *Plasmodium falciparum*. Second Health and Medical Sciences Conference, USM, 18 – 20 June 2008.
61. Kadir R, Mahamud R, Norazmi MN. Construction of recombinant *Mycobacterium bovis* bacille Calmette Guerin (rBCG) expressing B cell epitopes of *Mycobacterium tuberculosis*. Second Health and Medical Sciences Conference, USM, 18 – 20 June 2008.
62. Mahamud R, Acosta A, Sarmiento ME, Norazmi MN. Serological reactivity to mycobacterial proteins in human tuberculosis. MSMBB 17th Scientific Meeting Saujana Hotel, Kuala Lumpur, 23 – 25 June 2008.
63. Nasir R, Norazmi MN, Yaacob NS. Differential expression of PPAR γ 1 and γ 2, and ER α in MCF-7 and MDA-MB-231 breast cancer cell lines. 20th Meeting of the European Association for Cancer Research, Lyon, France, 5-8 July 2008
64. Edinur H, Zafarina Z, Spinola H, Panneerchelvam S, Nadia TP, Norazmi MN. HLA polymorphism in six Malay ethnic groups in Malaysia. 3rd International Conference on Postgraduate Education, Penang, Malaysia, 16-17 December 2008
65. Nasir R, Norazmi MN, Yaacob NS. 17- β estradiol potentiates 15 deoxy-Prostaglandin J₂ induced apoptosis via the mitochondrial pathway in MFC-7 but not MDA-MB-231 cell line. 14th National Conference of Medical and Health Sciences, Kota Bharu, Kelantan, 21-22 May 2009
66. Nengsih A, Norazmi MN, Yaacob NS. Tualang honey induces cell death of human cancer cell lines, 14th National Conference of Medical and Health Sciences, Kota Bharu, Kelantan, 21-22 May 2009
67. Nik Mohd Kamal NNS, Zainal Abidin SAI, Nasir R, Nengsih A, Navaratnam V, Lai CS, Norazmi MN, Yaacob NS. *In vitro* antitumor activity of *Strobilanthes crispus* on human cancer cell lines. 14th National Conference of Medical and Health Sciences, Kota Bharu, Kelantan, 21-22 May 2009

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

68. Mohamad D, Suppian R, Mohd Redzwan N, Nurul AA, Norazmi MN. Production of IL-1 β by macrophage stimulated with recombinant BCG (rBCG) expressing MSP-1C of *Plasmodium falciparum*. 34th Annual Conference of the Malaysian Society for Biochemistry and Molecular Biology and 3rd ASEAN Biochemistry Conference. Prince Hotel Kuala Lumpur, 7th-8th October 2009
69. Mohamud R, Azlan M, Olivares N, Vila A, Yero D, Alvarez N, Sarmiento ME, Acosta A, Norazmi MN. Development of recombinant BCG expressing B and T cell epitopes of *M. tuberculosis*, Vaccine Congress 2009 Singapore, 4-6 October 2009
70. Norazmi MN, Mohamud R, Kadir R, Azlan M, Olivares N, Vila A, et al. Immunogenicity of a recombinant *Mycobacterium bovis* bacille Calmette–Guérin expressing T and B cell epitopes of *M. tuberculosis* antigens. 3rd Vaccine Congress, Ritz Carlton Hotel, Singapore 4-6 October 2009
71. Shahril A, Panneerchelvam S, Zafarina Z, Norazmi MN. Human leukocyte antigen (HLA) polymorphism in four Malay sub-ethnic groups in peninsular Malaysia, International symposium of forensic science and environmental health, PWTC 9-11 November 2009
72. Suppian R, Norazmi MN. Potential vaccines against malaria. Symposium Kebudayaan Indonesia-Malaysia (SKIM) XI, Bandung, Indonesia, 10 – 12 November, 2009
73. Nengsih A, Norazmi MN, Yaacob NS. *Tualang* honey synergizes with tamoxifen to induce cell death in MCF-7 cells. *Second International Conference on the Medicinal Use of Honey*, Kota Bharu, Kelantan, 13-15 January 2010
74. Suppian R, Noraini MZ, Nurul AA, Norazmi MN. Construction of DNA vaccine expressing the 19 kDa C-terminus of merozoite surface protein-1 (MSP-1) of *Plasmodium falciparum*. National Conference on Environment & Health, 17-18 March, 2010.
75. Nik Mohd Kamal NNS, Nurraihana H, Lai CS, Navaratnam V, Norazmi MN, Yaacob NS. Effect of a dichloromethane fraction of *Strobilanthes crispus* on tamoxifen-induced apoptosis in MDA-MB-231 cells. *24th Scientific Meeting of the Malaysian Society of Pharmacology & Physiology*, Shah Alam, Selangor, 2-3 June 2010
76. Yaacob NS, Nik Mohd Kamal NNS, Lai CS, Navaratnam V, Norazmi MN. Promotion of tamoxifen-induced apoptosis in MCF-7 and MDA-MB-231 cells by a dichloromethane fraction of *Strobilanthes crispus*. *21st Meeting of the European Association for Cancer Research*, Oslo, Norway, 26 – 29 June 2010

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

77. Nurul AA, Suppian S, Norazmi MN. Recombinant BCG-based vaccine induced protective immunity against blood-stage malarial parasite. Innovative strategies for vaccine: malaria, tuberculosis, HIV. Sorrento, Italy. 3rd-6th November 2010
78. Dhaniah M, Rapeah S, NurulSyuhada O, Nurul AA, Norazmi MN. Lipopolysaccharide modulates nitric oxide, inducible nitric oxide synthase and IL-12 production in mouse macrophage cell line infected with BCG and rBCG expressing the MSP1-C of *Plasmodium falciparum*. National Postgraduate Seminar Dewan Persidangan CRIM Centre for Research and Instrumentation Management, Universiti Kebangsaan Malaysia, 30th December 2010
79. Dhaniah M, Rapeah S, Norazmi MN. Phagocytic activity and cell viability of the mouse macrophage cell line J774A.1 infected with BCG and rBCG expressing the MSP-1C of *Plasmodium falciparum*. 1st National Postgraduates Conference on Molecular Medicine. Renaissance Hotel, Kota Bharu Kelantan. 13-14 April 2011
80. Mohd Nawi MA, Choo YY, Geik YA, Tan GC, Acosta A, Sarmiento ME, Falero G, Rodriguez I, Otero O, Reyes F, Camacho F, Chan YY, Norazmi MN. A study of 16kDa antigen as a potential biomarker for the detection of *Mycobacterium tuberculosis*. 2nd Health and Medical Sciences Conference and 16th National Conference on Medical and Health Sciences, 23-24 June 2011
81. Zainal Abidin SA, Norazmi MN, Yaacob NS. SC/D-F9 induced apoptosis and caspase 3/7 activation in prostate cancer cells. 36th Annual Conference of the Malaysian Society for Biochemistry and Molecular Biology, Eastin Hotel, Petaling Jaya, 27-28 July, 2011
82. Nik Mohd Kamal NNS, Norazmi MN, Yaacob NS. Anticancer activities of SC/D-F9 of *Strobilanthes crispus* in MDA-MB-231 cells, 36th Annual Conference of the Malaysian Society for Biochemistry and Molecular Biology, Eastin Hotel, Petaling Jaya, 27-28 July, 2011
83. Rapeah S, Anis Fadilah Z, Nurul AA, Norazmi MN. Modulation of cell growth and apoptosis of the human macrophage cell line by a recombinant BCG vaccine expressing the MSP-1C of *Plasmodium falciparum*. Colloquium on Health Sciences and Engineering Technology (2011 CHSET). School of Health Sciences, USM, Kota Bharu Kelantan. 16-17 Oct 2011
84. Nengsih A, Norazmi MN, Yaacob NS. Modulation of anticancer effects of tamoxifen in MDA-MB-231 cells by *Tualang* honey. *International Conference on Traditional Medicine*, Bayview Beach Resort, Pulau Pinang, 29-30 November 2011
85. Allia S, Panneerchelvam S, Zafarina Z, Norazmi MN. Assessment of genetic relationship of Malay sub-ethnic groups using HLA class I and class II allele frequencies. 2nd International Forensic Science Symposium, Le Meridien Hotel, Kuala Lumpur, 14-16 November 2011

RESEARCH COMMUNICATIONS IN CONFERENCES / SEMINARS / SYMPOSIA

86. Noorhayati AR, Siti Suraiya MN, Zulaikah M, Norazmi MN. Serodiagnosis of tuberculosis infection: An evaluation of short peptides of 16 kilodalton *Mycobacterium tuberculosis* protein. 4th National Conference of Infectious Disease, Grand Riverview Hotel, Kota Bharu, 7 – 8 December 2011
87. Wong WK, Ahmad HF, Isa NF, Noordin R, Jan Mohamed HJ, Norazmi MN, Owi BT, Lim BH. Comparison of direct wet mount, Kato-Katz and Formalin-ether concentration techniques for detection of soil-transmitted helminth ova. Second International Symposium on Wellness & Healthy Lifestyle, School of Health Sciences, USM, 8 – 9 December 2011

RESEARCH GRANTS OBTAINED – As Principal Investigator

1. **Title:** Monoclonal antibodies against human mononuclear cells
Sponsors: USM Short Term Grant
Amount: RM14,600
Co-Researchers: none
Period: 01/11/90 – 31/10/92 (Completed)

2. **Title:** Immunophenotyping of peripheral blood mononuclear cells in acute malarial infection
Sponsors: USM Short Term Grant
Amount: RM19,700
Co-Researchers: none
Period: 01/12/92 – 30/11/94 (Completed)

3. **Title:** T cell immunity in falciparum malaria
Sponsors: Intensification of Research in Priority Areas (IRPA)
Amount: RM307,922
Co-Researchers: Zainuddin ZF
Period: 01/01/93 – 31/12/95 (Completed)

4. **Title:** Determination of antigenic determinants of a Malaysian isolate of *Plasmodium falciparum* that stimulate B and T cell responses
Sponsors: WHO Re-Entry Grant
Amount: USD20,000 (~RM50,000)
Co-Researchers: Zainuddin ZF
Period: 1993 – 1995 (Completed)

5. **Title:** Cloning of *Plasmodium falciparum* antigenic epitopes for expression in *Mycobacterium bovis* BCG
Sponsors: Commission of The European Community
Amount: ECU29,064 (~RM100,000)
Co-Researchers: Zainuddin ZF
Period: 1995 (Completed)

6. **Title:** Construction of recombinant *Mycobacterium bovis* BCG containing the erythrocyte binding antigen (EBA) of *Plasmodium falciparum*. Potential use as a malarial vaccine
Sponsors: Malaysia Toray Science Foundation (MTSF)
Amount: RM50,000
Co-Researchers: Zainuddin ZF
Period: 09/12/96 – 05/06/00 (Completed)

RESEARCH GRANTS OBTAINED – As Principal Investigator

7. **Title:** Development of recombinant BCG as a malarial vaccine
Sponsors: Intensification of Research in Priority Areas (IRPA), RM7
Amount: RM285,250
Co-Researchers: none
Period: 01/04/97 – 31/03/00 (Completed)

8. **Title:** Cloning and expression of the murine malaria parasite *Plasmodium berghei* blood stage antigens in *Mycobacterium bovis* bacille Calmette Guerin (BCG)
Sponsors: Intensification of Research in Priority Areas (IRPA), RM7
Amount: RM124,000
Co-Researchers: none
Period: 01/10/99 – 30/09/01 (Completed)

9. **Title:** Cloning and expression of the murine malaria parasite *Plasmodium berghei* blood stage antigens in *Mycobacterium bovis* bacille Calmette Guerin (BCG)
Sponsors: Intensification of Research in Priority Areas (IRPA)
Amount: RM124,000
Co-Researchers: none
Period: 1999 – 2001 (Completed)

10. **Title:** Construction, immunogenicity and efficacy of recombinant *Mycobacterium bovis* bacille Calmette-Guerin (BCG) containing 2 *P. falciparum* candidate epitopes as malarial vaccine
Sponsors: Intensification of Research in Priority Areas (IRPA), RM7
Amount: RM287,700
Co-Researchers: Zainuddin ZF
Period: 01/10/00 – 30/09/03 (Completed)

11. **Title:** Construction of recombinant *M. bovis* BCG containing two candidate *Plasmodium falciparum* blood stage epitopes
Sponsors: USM Short Term Grant
Amount: RM12,018
Co-Researchers: none
Period: 2000-2001 (Completed)

12. **Title:** The role of PPAR α and PPAR γ in T cell activation
Sponsors: Fundamental Research Grant Scheme (FRGS)
Amount: RM77,644
Co-Researchers: Yaacob NS
Period: 01/07/02 – 30/06/04 (Completed)

RESEARCH GRANTS OBTAINED – As Principal Investigator

13. **Title:** Molecular approaches towards the development of vaccines against infectious diseases: Development of recombinant BCG as a multivalent vaccine against malaria and tuberculosis
Sponsors: Intensification of Research in Priority Areas (IRPA) (PR), RM8
Amount: RM850,000
Co-Researchers: Zainuddin ZF (USM), Acosta A, Sarmiento ME (Finlay Institute, Cuba)
Period: 01/01/02 – 31/03/05 (Completed)

14. **Title:** Molecular studies on disease biomarkers and pathogenesis of cancer: Colorectal carcinoma as a model
Sponsors: National Biotechnology Directorate (Sub-Project under Dr. Patricia Lim, IMR)
Amount: RM211,050
Co-Researchers: Yaacob NS
Period: 01/01/02 – 31/03/04 (Completed)

15. **Title:** The role of PPAR γ in the regulation of immune activation
Sponsors: Intensification of Research in Priority Areas (IRPA) (EA), RM8
Amount: RM264,500
Co-Researchers: Yaacob NS
Period: 01/07/02 – 30/06/05 (Completed)

16. **Title:** Evaluation of the immunological mechanisms induced by recombinant BCG clones expressing T and B cell epitopes of *Mycobacterium tuberculosis*
Sponsors: FRGS Top-Down
Amount: RM779,100
Co-Researchers: Zainuddin ZF (USM), Acosta A, Sarmiento ME (Finlay Institute, Cuba)
Period: 01/08/03 – 31/07/06 (Completed)

17. **Title:** Elucidation of the MAP kinase transduction pathway(s) involved in IL-2-induced CD4+CD25+ T cell activation – possible interactions of the relevant transcription factors with PPAR γ 2 and Foxp3
Sponsors: Academy of Sciences Malaysia (SAGA)
Amount: RM305,500
Co-Researchers: Yaacob NS
Period: 01/03/05 – 31/07/08 (Completed)

18. **Title:** Vaccine development against infectious diseases
Sponsors: ISESCO – Islamic Education, Scientific and Cultural Organization
Amount: RM7,600
Co-Researchers: none
Period: 01/11/05 – 30/11/05 (Completed)

RESEARCH GRANTS OBTAINED – As Principal Investigator

19. **Title:** Molecular typing of HLA Sub-Project in "Menjejaki Asal-Usul Bangsa Melayu Melalui Kajian Morfologi, Sejarah Sosio Budaya dan Analisis Genetik"
Sponsors: Top-Down FRGS (Program led by Zainuddin Z)
Amount: Total Amount RM1,438,780 (sub-project: RM120,000)
Co-Researchers: Zafarina Z, Panneerchelvam S
Period: 15/03/07 – 14/09/10 (Completed)

20. **Title:** Formulation of BCG for the effective delivery of malarial epitopes
Sponsors: Strategic NBD Grant, Institute of Pharmaceuticals and Nutraceuticals
Amount: RM1,199,500
Co-Researchers: none
Period: 01/03/07 – 31/12/09 (Completed)

21. **Title:** Enhancing strategies for the development of tuberculosis vaccine
Sponsors: Special MOSTI Grant, USM-Cuba International Collaboration
Amount: RM1,435,280
Co-Researchers: Acosta A, Sarmiento ME (Finlay Institute, Cuba)
Period: 01/03/07 – 30/09/10 (Completed)

22. **Title:** Evaluation of tuberculosis experimental vaccine containing T and B epitopes of latency associated antigens of *M. tuberculosis* in infection models in mice
Sponsors: RU Eureka Grant
Amount: RM1,797,900
Co-Researchers: Acosta A, Sarmiento ME (Finlay Institute, Cuba), Hernandez Pando R (National Institute of Nutrition and Medical Sciences, Mexico), Barry Walker K (National Institute of Biological Standards & Control, UK)
Period: 05/10/07 – 21/06/11 (Completed)

23. **Title:** Regulatory role of T Helper 17 (Th17) cells in autoimmune diabetes
Sponsors: RU Grant
Amount: RM249,620
Co-Researchers: Yaacob NS, Nurul AA
Period: 01/05/10 – 30/04/13 (Ongoing)

24. **Title:** Tuberculosis Vaccine and Diagnostic Development Programme
Sponsors: MOSTI Science Fund
Amount: RM604,400
Co-Researchers: Chan YY (USM), Acosta A, Sarmiento ME (Finlay Institute, Cuba);
Period: 01/04/11 – 31/10/12 (Ongoing)

RESEARCH GRANTS OBTAINED – As Principal Investigator

25. **Title:** Association of selected miRNAs in susceptibility and resistance to tuberculosis

Sponsors: Fundamental Research Grant Scheme

Amount: RM82,600

Co-Researchers: Acosta A, Sarmiento ME (Finlay Institute, Cuba); Hanekom W, Mohamad H (SATVI, South Africa)

Period: 01/04/11 – 31/03/13 (Ongoing)
26. **Title:** "Tropical" Tuberculosis: Delineating Host-Environment-Pathogen Interactions

Sponsors: Long-Term Research Grant Scheme (LRGS Top-Down)

Amount: RM6,000,000 (total funding) (RM1,272,900 for Sub-Project)

Co-Researchers: Ngeow YF (UM), Noorliza N (MoH)

Period: 01/08/11 – 31/07/14 (Ongoing)

RESEARCH GRANTS OBTAINED – As Co-Investigator

- | | |
|-----|---|
| 27. | Title: The immunophenotype of acute leukaemia in Kelantan as determined by flow cytometry
Sponsors: USM Short Term Grant
Amount: RM19,869
PI: Dasgupta A
Period: 01/04/93 – 30/09/95 (Completed) |
| 28. | Title: The effects of carbohydrate supplement and water on physiological parameters during exercise in warm and humid conditions
Sponsors: USM Short Term Grant
Amount: RM19,993
PI: Singh R
Period: 01/02/94 – 30/04/95 (Completed) |
| 29. | Title: Characterization of several monoclonal antibodies and their reactivities to normal and malignant tissues
Sponsors: USM Short Term Grant
Amount: RM19,965
PI: Mat I
Period: 22/06/93 – 30/06/95 (Completed) |
| 30. | Title: Immunological profile in recurrent pyogenic cholangitis
Sponsors: USM Short Term Grant
Amount: RM19,967
PI: Taufeeq K
Period: 01/12/93 – 30/11/95 (Completed) |
| 31. | Title: Lymphocyte activation status in HIV-infected intravenous drug users
Sponsors: USM Short Term Grant
Amount: RM18,237
PI: Musa M
Period: 01/02/95 – 31/07/97 (Completed) |
| 32. | Title: The involvement of the nuclear receptor, peroxisome proliferator-activated receptor gamma (PPAR γ) in experimental diabetes
Sponsors: Intensification of Research in Priority Areas (IRPA) (EA)
Amount: RM131,000
PI: Yaacob NS
Period: 1999 – 2001 (Completed) |

RESEARCH GRANTS OBTAINED – As Co-Investigator

- | | |
|-----|---|
| 33. | <p>Title: Gene quantification by a competitive quantitative PCR technique using a homologous internal standard</p> <p>Sponsors: USM Short Term Grant</p> <p>Amount: RM15,000</p> <p>PI: Yaacob NS</p> <p>Period: 15/12/00 – 14/12/01 (Completed)</p> |
| 34. | <p>Title: Effect of rifampicin and chloroquine combination on chloroquine-resistant <i>Plasmodium berghei</i> in mice</p> <p>Sponsors: USM Short Term Grant</p> <p>Amount: RM13,900</p> <p>PI: Raju SS</p> <p>Period: 15/12/00 – 14/04/02 (Completed)</p> |
| 35. | <p>Title: Transcriptional and translational expression of PPARα and PPARγ in the human colorectal cancer cell lines, COLO205 and HT-29</p> <p>Sponsors: USM Short Term Grant</p> <p>Amount: RM11,400</p> <p>PI: Yaacob NS</p> <p>Period: 15/11/01 – 14/11/02 (Completed)</p> |
| 36. | <p>Title: Gene frequencies of D16S539, D7S820 and D13S317 STR alleles in random "Malay" populations</p> <p>Sponsors: USM Short Term Grant</p> <p>Amount: RM18,622</p> <p>PI: Panneerchelvam S</p> <p>Period: 01/03/02 – 31/10/03 (Completed)</p> |
| 37. | <p>Title: The possible modulation of tumourigenesis in the ovarian cancer cell line, CaOv, by PPARα and PPARγ ligands</p> <p>Sponsors: Fundamental Research Grant Scheme (FRGS)</p> <p>Amount: RM97,723</p> <p>PI: Yaacob NS</p> <p>Period: 2002 – 2004 (Completed)</p> |
| 38. | <p>Title: Development of vaccine delivery platforms for tropical infectious disease</p> <p>Sponsors: National Biotechnology Directorate (MOSTE)</p> <p>Amount: RM606,800</p> <p>PI: Zainuddin ZF</p> <p>Period: 2002 – 2006 (Completed)</p> |

RESEARCH GRANTS OBTAINED – As Co-Investigator

- | | |
|-----|---|
| 39. | <p>Title: Molecular pathogenesis of insulin-dependent diabetes mellitus: The role of PPARα and PPARγ</p> <p>Sponsors: Intensification of Research in Priority Areas (IRPA) (EA)</p> <p>Amount: RM293,000</p> <p>PI: Yaacob NS</p> <p>Period: 2002 – 2005 (Completed)</p> |
| 40. | <p>Title: Effects of p-glycoprotein inhibitors on chloroquine/mefloquine resistant malaria model system <i>in vitro</i> and <i>in vivo</i>: Towards identifying chemosensitizers for malaria</p> <p>Sponsors: Intensification of Research in Priority Areas (IRPA) (EA)</p> <p>Amount: RM172,000</p> <p>PI: Raju SS</p> <p>Period: 2003 – 2005 (Completed)</p> |
| 41. | <p>Title: Characterisation of the transcription factor, CTCF & YB-1 in the cervical cancer cell line, HeLa</p> <p>Sponsors: Fundamental Research Grant Scheme (FRGS)</p> <p>Amount: RM85,213</p> <p>PI: Shamsuddin S</p> <p>Period: 01/10/03 – 30/09/05 (Completed)</p> |
| 42. | <p>Title: Changes in c-Fos gene expression in the spinal cord and its role in the pathogenesis of stress-induced analgesia and the modulation of acute pain</p> <p>Sponsors: Fundamental Research Grant Scheme (FRGS)</p> <p>Amount: RM97,850</p> <p>PI: Ismail Z</p> <p>Period: 01/10/03 – 30/09/05 (Completed)</p> |
| 43. | <p>Title: STR DNA profiling on random ethnic Malay, Chinese and Indian population of Malaysia using fluorescent-labeled multiplex primer kits for use in human identification</p> <p>Sponsors: Intensification of Research in Priority Areas (IRPA) (EA)</p> <p>Amount: RM192,500</p> <p>PI: Panneerchelvam S</p> <p>Period: 2003 – 2006 (Completed)</p> |
| 44. | <p>Title: Effect of omeprazole and chloroquine combination on chloroquine-resistant Plasmodia <i>in vitro</i> and <i>in vivo</i></p> <p>Sponsors: USM Short Term Grant</p> <p>Amount: RM13,900</p> <p>PI: Low JH</p> <p>Period: 01/04/04 – 31/03/06 (Completed)</p> |

RESEARCH GRANTS OBTAINED – As Co-Investigator

45. **Title:** The expression of PPARs in the cervical cancer cell line, HeLa, and the effects of specific PPAR ligands on cell growth; 'Cancer of the Cervix' Program
Sponsors: Intensification of Research in Priority Areas (IRPA) (PR)
Amount: RM267,000
PI: Yaacob NS
Period: 2003 – 2006 (Completed)

46. **Title:** Mechanism of PPAR γ -Induced Apoptosis in MDA-MB-231 and MCF-7 Breast Cancer Cell Lines
Sponsors: Fundamental Research Grant Scheme (FRGS)
Amount: RM109,000
PI: Yaacob NS
Period: 2006 – 2009 (Completed)

47. **Title:** "Delineating the origin of the Malays via morphological, historical, socio-cultural and genetic analyses (Menjejaki Asal-Usul Bangsa Melayu Melalui Kajian Morfologi, Sejarah Sosio Budaya dan Analisis Genetik)"
Sponsors: Top-Down FRGS
Amount: Total Amount RM1,438,780
PI: Zafarina Z
Period: 15/03/07 – 14/09/10 (Completed)

48. **Title:** The potential anti-cancer effects of tualang honey: Possible mechanism(s) involved.
Sponsors: USM Research University Grant
Amount: RM120,000
PI: Yaacob NS
Period: 19/10/07 – 17/09/10 (Completed)

49. **Title:** Cancer cell death mechanism(s) induced by standardized extract of *Misai Kuching* (*Orthosiphon stamineus*)
Sponsors: USM Research University Grant
Amount: RM347,600
PI: Yaacob NS
Period: 31/10/07 – 30/09/10 (Completed)

50. **Title:** Investigations into the anti-cancer properties of *Orthosiphon stamineus* in Cancer cell lines
Sponsors: British Council Prime Minister's Initiative 2
Amount: GBP27,194 (~RM175,000)
PI: Kass G (Host PI), Yaacob NS (Country PI)
Period: 2008 – 2010 (Completed)

RESEARCH GRANTS OBTAINED – As Co-Investigator

- | | |
|-----|---|
| 51. | Title: Construction of DNA vaccine expressing two different malarial epitopes
Sponsors: USM Short Term Grant
Amount: RM35,738
PI: Suppian R
Period: 01/03/08 – 28/02/11 (Completed) |
| 52. | Title: Immunoregulatory effects of a recombinant BCG (rBCG) expressing malaria epitope on macrophage
Sponsors: Fundamental Research Grant Scheme (FRGS)
Amount: RM90,000
PI: Suppian R
Period: 2008 – 2011 (Completed) |
| 53. | Title: Influence of estradiol on the cell death pathway(s) induced by 15-deoxy prostaglandin J ₂ in breast cancer cells
Sponsors: Fundamental Research Grant Scheme (FRGS)
Amount: RM99,000
PI: Yaacob NS
Period: 2010 – 2012 (Ongoing) |
| 54. | Title: The prehistoric settlement of peninsular Malaysia. A study using complete mitochondrial DNA sequence of the Malay population
Sponsors: USM Research University Grant
Amount: RM249,880
PI: Zafarina Z
Period: 2010 – 2013 (Ongoing) |
| 55. | Title: Development of an electrochemical biosensor for specific detection of <i>Mycobacterium tuberculosis</i> infection
Sponsors: MOSTI (ER-BIOTEK)
Amount: RM120,800
PI: Chan YY
Period: 15/08/11 – 14/02/13 (Ongoing) |
| 56. | Title: The mechanism of osseointegration in hydroxyapatite (HA)-induced osteoblast stimulated with cytokines
Sponsors: Fundamental Research Grant Scheme (FRGS)
Amount: RM98,500
PI: Nurul AA
Period: 2011 – 2013 (Ongoing) |

RESEARCH GRANTS OBTAINED – As Co-Investigator

- | | |
|-----|---|
| 57. | <p>Title: Modulation of cell growth and apoptosis of the human macrophage cell line by recombinant BCG (rBCG) expressing the MSP-1C of <i>Plasmodium falciparum</i></p> <p>Sponsors: Fundamental Research Grant Scheme (FRGS)</p> <p>Amount: RM234,186</p> <p>PI: Suppian R</p> <p>Period: 2011 – 2013 (Ongoing)</p> |
| 58. | <p>Title: Tracing the origin of the Malays: Molecular genotyping of blood group and killer cell immunoglobulin like receptor (KIR) polymorphisms among sub-ethnic groups</p> <p>Sponsors: USM Research University Grant</p> <p>Amount: RM227,854</p> <p>PI: Zafarina Z</p> <p>Period: 2011 – 2014 (Ongoing)</p> |
| 59. | <p>Title: Sequence-based typing of human leukocyte antigen A, B, and DR of random Malay population of Peninsula Malaysia</p> <p>Sponsors: USM Research University Grant</p> <p>Amount: RM240,857</p> <p>PI: Panneerchelvam S</p> <p>Period: 01/12/11 – 30/11/14 (Ongoing)</p> |
| 60. | <p>Title: Characterisation and mechanism of the anticancer activity of an active fraction of <i>S. crispus</i> in a breast cancer model.</p> <p>Sponsors: USM Research University Team Grant</p> <p>Amount: RM904,334</p> <p>PI: Yaacob NS</p> <p>Period: 01/12/11 – 30/11/14 (Ongoing)</p> |
| 61. | <p>Title: Evolutionary genomics and anthropological approaches on endangered Malaysian aborigine populations: Towards ensuring their sustainability: Project 2: Phylogeny and phylogeography analysis of Orang Asli: Peopling of South East Asia</p> <p>Sponsors: Long-Term Research Grant Scheme (LRGS Top-Down)</p> <p>Amount: RM8,000,000 (total funding) (RM2,400,000 for Project 2)</p> <p>PI: Salleh MZ (UiTM), Zafarina Z (PI for Project 2)</p> <p>Period: 01/08/11 – 31/07/16 (Ongoing)</p> |

UNDERGRADUATE TEACHING

Involved in teaching Immunology and facilitated "Problem-based Learning" (for MD students) for the following programs at the School of Medical Sciences 1990 - 2000.

1. MD Program
2. Medical Laboratory Technology Program
3. Advanced Diploma in Nursing Program

Involved in teaching Immunology and Molecular Biology for the following courses at the School of Health Sciences 2000 - present.

1. Basic Immunology
2. Advanced Immunology
3. Molecular Biology Techniques
4. Forensic Body Fluids Investigation
5. Forensic DNA Profiling

UNDERGRADUATE SUPERVISION

Final Year Projects

1. **Ms. Nurul Asma Abdullah**, Biomedicine 2002, "Cloning of the merozoite surface protein-1 C terminus in BCG"
2. **Ms. Rita Ting Ling**, Biomedicine 2003, "Expression studies of rBCG expressing malaria epitopes"
3. **Ms. Ku Sheau Jen**, Biomedicine 2003, "Expression of the transcription factor, PPAR, in selected human monocytes"
4. **Ms. Mohana Letchumanan**, Biomedicine 2003, "Expression of the transcription factor, PPAR, in immune cells of balb/c mice"
5. **Ms. Yong Kim Far**, Biomedicine 2003, "Expression of the transcription factor, PPAR, in colorectal cancer cell line"
6. **Mr. Kumara Thevan a/l Krishnan**, Forensic Science 2004, "Allele frequencies of STRs (CSF1PO, TPOX and TH01) in random Tamil population in Malaysia"

Final Year Projects

7. **Mr. Saravanakumar a/l Maniam**, Forensic Science 2004, "Allele frequencies of STRs (F13A01, FESFPS and vWA) in random Chinese population of Malaysia"
8. **Mr. Lai Kok Fai**, Forensic Science 2004, "Allele frequencies of D16S539, D7S820 and D13S317 STRs in random Chinese population of Malaysia"
9. **Ms. Yuvaneswari a/p Chandramoulee Swaran**, Forensic Science 2004, "Allele frequencies of CSF1PO, TPOX and TH01 in random Chinese population of Malaysia"
10. **Ms. Sumathy a/p Velayutham**, Forensic Science 2004, "Allele frequencies of F13A01, FESFPS and vWA STRs in random Tamil population of Malaysia"
11. **Mr. Poon Yoong Keat**, Forensic Science 2005, "Allele frequencies of D1S80 VNTR in random Sikh population of Malaysia"
12. **Ms. Ekhzan bt. Mat Nasir**, Forensic Science 2005, "Allele frequencies of D1S80 VNTR in random Malay population of Malaysia"
13. **Ms. Rita Tie Ung Ha**, Forensic Science 2005, "Allele frequencies of D1S80 VNTR in random Chinese population of Malaysia"
14. **Mr. Sasitaran a/l Iyavoo**, Forensic Science 2005, "Allele frequencies of D1S80 VNTR in random Tamil population of Malaysia"
15. **Ms. Fatima Reyes 2008**, "Partial bioinformatics analysis of cell wall proteins of BCG. Production and characterization of an antigenic extract" (Finlay Institute, Cuba)
16. **Ms. Nor Amila Bt Amri 2010**, Molecular characterisation of *Decapterous maruadsi* (Ikan sardin), *Atule mate* (Ikan selar) and *Scomberomorous maculatus* (Ikan Tenggiri) from Malaysian marine ecosystem using DNA sequence of mtDNA 12S rRNA
17. **Ms. Amirah Hazwani Bt Abdul Halim 2010**, Molecular characterisation of *Parastromatous niger* (Black pomfret), *Amblyogaster sirm* (Spotted sardin) and *Megalapsis cordyla* (Hard tail scad) from Malaysian marine ecosystem using DNA sequence of mtDNA 12S rRNA
18. **Ms. Wan Muhaini bt Wan Mansor 2011**. Expression of peroxisome proliferator-activated receptor gamma (PPAR γ) and Forkhead Box P3 (Foxp3+) in inducible T regulatory cells
19. **Ms. Nik Noor Atiqah Nadirah bt Nik Ludin 2011**. Plasmid stability in recombinant *Mycobacterium smegmatis*
20. **Mr. Hafiz bin Rommali 2011**. DNA extraction from blood in soil

Final Year Projects

21. **Loo Suet Kee 2011.** Molecular characterization of *Selar crumenophthalmus* (ikan Lolong), *Decapterus maraudsi* (ikan Sadin) and *Rastrelliger kanagurta* (ikan Kembong hitam) fish species using mtDNA COI gene (DNA barcoding)
22. **Che Alhafizol bin Che Ismail 2011.** Molecular characterization of *Scomberomorus maculatus* (ikan Tenggiri), *Atule mate* (ikan Selar) and *Decapterus russeli* (ikan Selayang) species of fish from Malaysian marine ecosystem using DNA sequence of mitochondrial DNA (mtDNA) cytochrome oxidase subunit I (COI) (DNA barcoding)

Industrial Training / Electives

1. Hanafi Sidik and Mohd. Nizar Bidin, MD Elective Program year 2, 1990/91
2. Md. Azman Seeni Mohd. and Lau Hut Yee, MLT Elective Program year 2, 1992/93
3. Arfahuza Selimin, Badrul Hisham, Intan Melati, Masharudin dan Nor Maizura, MD Elective Program year 2, 2000/01
4. Ms Sylvia Daim "Transformation procedures for BCG" Universiti Malaysia Sabah, 2000
5. Zaihasra bt. Ismail, "Polymerase Chain Reaction", School of Chemistry, USM, 2001
6. Rozainah Mohammad Yusof "DNA Fingerprinting", Faculty of Allied Health, UKM, 2002
7. Mohd. Nizam Haron "DNA Fingerprinting", Faculty of Allied Health, UKM, 2002
8. Aishah Hani Azil "Assembly PCR in the cloning of malarial epitopes into BCG", Faculty of Allied Health, UKM, 2002
9. Norzilawati bt. Hashim "Polymerase Chain Reaction", School of Chemistry, USM, 2002
10. Mohd. Rozairi Mohamed Zain, "Development of a website for malaria and PPAR research groups", Entrepreneurs Development Institute, 2002
11. Ong Wee Theng, "Mechanism of anti-cancer effects", School of Science & Technology, Universiti Malaysia Sabah, 2004
12. Siti Rohani bt. Mohamad Yusoff, "Cloning of selected malarial epitopes in BCG by PCR", Faculty of Science, University Malaya, 2005
13. Choon Wang Shan, "Expression of selected malarial epitopes in BCG", Faculty of Science, Universiti Malaya, 2005

GRADUATE SUPERVISION – PhD

1. **Ms. Yuka Hara, 1997:** "Characterisation of the IBMR3 monoclonal antibody" (Co-Supervisor), **graduated 2001**
2. **Ms. Rapeah Suppian, 1999:** September 1999, "Recombinant BCG expressing malaria and tuberculosis epitopes" (Main Supervisor), **graduated 2003**
3. **Dr. Rahimah Zakaria, 2002:** "The role of insulin-like growth factor (IGF) system in mouse diabetic embryopathy" (Co-Supervisor), **graduated 2007**
4. **Ms. Khoo Boon Yin, 2003:** "Anti-cancer effects of PPAR isoforms" (Co-supervisor), **graduated 2007**
5. **Ms. Nurul Asma Abdullah, 2004:** "Cloning of the C-terminus of merozoite surface protein-1 (MSP-1C) in *Mycobacterium bovis* bacille Calmette Guerin (BCG) using assembly PCR" (Main supervisor), **graduated 2008**
6. **Dr. Nesty Olivares, 2006:** "Role of humoral immunity against tuberculosis" Finlay Institute, Cuba (Co-supervisor), **graduated 2010**
7. **Ms. Maria de los Angeles Garcia, 2006:** "Expression of T and B epitopes of *M. tuberculosis* in yeast" Finlay Institute, Cuba (Co-supervisor), **graduated 2010**
8. **Ms. Nor Effa Syazuli Zulkafli, 2008:** "Influence of PPAR γ ligand on the expression of FoxP3 in T regulatory cells" (Main Supervisor)
9. **Ms Alina Puig, 2008:** "Evaluation of the protection capability of a proteoliposome from BCG in a challenge model against Mtb in mice" (Co-Supervisor)
10. **Ms. Yanelly Tirado, 2008:** "Evaluation of the protection capability of a proteoliposome from *M. smegmatis* in a challenge model against Mtb in mice" (Co-Supervisor)
11. **Ms. Maria de los Angeles Garcia, 2008:** "Evaluation of the protection capability of smegmosomes in a challenge model against Mtb in mice" (Co-Supervisor)
12. **Ms. Nadine Alvarez, 2008:** "Evaluation of the protection capability of IgAs in a challenge model against Mtb in mice" (Co-Supervisor)
13. **Mr. Juan Carlos Ramirez, 2008:** "Epitope identification in pathogenic mycobacteria" (Co-Supervisor)
14. **Ms. Nik Nursyazni Nik Mohamed Kamal, 2009:** "Modulation of the apoptotic activity of tamoxifen by *Strobilanthes crispus* in breast cancer cell lines" (Co-supervisor)

GRADUATE SUPERVISION – PhD

15. **Ms. Zulaikah Mohamed, 2009:** "Development of recombinant *Mycobacterium smegmatis* containing B & T cell epitopes for *Mycobacterium tuberculosis*" (Main Supervisor)
16. **Ms. Ailla Shahril, 2010:** "Human leukocyte antigen (HLA) analysis for Malay sub-ethnic groups in Peninsular Malaysia" (Main Supervisor)
17. **Ms. Ramlah Kadir, 2010:** "Evaluation of immunogenicity of liposomes from *Mycobacterium smegmatis* and proteoliposomes from BCG and *Mycobacterium smegmatis* as new vaccine candidates against tuberculosis" (Main Supervisor)
18. **Ms. Nur Ayuni Kadir, 2010:** "Enhancement of antigen presentation by autophagy" (Main Supervisor)
19. **Ms. Chin Siang Tean, 2010:** "Isolation and characterization of Mtb-specific Fab fragments from a unique phage-display library" (Co-Supervisor)
20. **Ms Shaminea a/p Sritharan, 2011:** "The mechanism of osteointegration in hydroxyapatite (HA) induced osteoblast stimulated with cytokines." (Co-Supervisor)
21. **Ms Fathimah Azzahroh bt Ahmad Hafad, (to register in 2012).** "Immunogenetics of susceptibility and resistance to tuberculosis" (Main Supervisor)

GRADUATE SUPERVISION – M.Sc

1. **Ms. Ruzilawati Abu Bakar, 2000:** "Measurement of PPAR α expression in human monocytes using a competitive quantitative RT-PCR technique" (Co-Supervisor), **graduated 2003**
2. **Mr. Ariffin Kaderl, 2001:** "The role of PPARs in experimental autoimmune diabetes" (Co-Supervisor), **graduated 2004**
3. **Dr. Zulkarnain Mustapha, 2001:** "Expression of retinoid X receptors (RXR) in autoimmune diabetes", (Co-Supervisor), **graduated 2004**
4. **Ms. Halisa Mohd. Darus, 2001:** "The influence of PPAR ligands on the growth of the colonic carcinoma cell lines, COLO 205 and HT-29" (Main Supervisor), **graduated 2005**
5. **Dr. Low Jen Hou, 2002:** "Effect of combination of chloroquine and p-glycoprotein inhibitors on chloroquine-resistant plasmodia" (Co-Supervisor), **graduated 2007**
6. **Mr. Mohd. Izuan Othman, 2002:** "The allele and genotype variation of 15 short tandem repeat (STR) loci in the Malaysian Malay population" (Co-Supervisor), **graduated 2005**
7. **Ms Teo Wan Huai, 2002:** "Cloning of the 47kDa serine repeat antigen (SERA) of *Plasmodium falciparum* in *Mycobacterium bovis* bacille Calmette Guerin (BCG) using assembly PCR" (Main Supervisor), **graduated 2007**
8. **Ms. Maryam Azlan, 2003:** "Cloning of the Mtb8.4 and Ag85B *Mycobacterium tuberculosis* epitopes as DNA vaccine" (Main supervisor), **graduated 2007**
9. **Ms Bhinu Shova Tuladhar, 2004:** "Mitochondrial DNA profiling in various ethnic groups in Malaysia" (Co-supervisor), **graduated 2006**
10. **Mr. Tan Chin Teck (University Malaya) 2004:** "Allele frequency distribution for 9 STR loci in the Sikh population of Malaysia" (Co-supervisor), **graduated 2007**
11. **Mr. Rafeezul Mohamed, 2004:** "The expression of PPAR γ 1 and PPAR γ 2 in naïve and memory T cell subsets", (Main supervisor), **graduated 2008**
12. **Ms Tan Hooi Min, 2004:** "Effect of p-glycoprotein inhibitors on mefloquine resistant malaria model system *in vitro* and *in vivo*: Towards identifying chemosensitizers for malaria" (Co-supervisor), **graduated 2007**
13. **Mr. Khairul Mohd. Fadzli Mustafa, 2004:** "Effect of fluoxetine on reversing chloroquine and mefloquine resistance in *Plasmodium falciparum*" (Co-supervisor), **graduated 2007**
14. **Ms. Rohimah Mahamud, 2004:** "Development of rBCG expressing the Mtb8.4 and Ag85B *Mycobacterium tuberculosis* epitopes" (Main supervisor), **graduated 2008**

GRADUATE SUPERVISION – M.Sc

15. **Mr. Kenny Goh Soen Keong, 2004:** "The correlation of PPAR expression and the pathogenesis of Type 1 diabetes mellitus" (Co-supervisor), **graduated 2008**
16. **Ms Nadine Alvarez, 2005:** Prediction of T and B epitopes of *M. tuberculosis* proteins, BCG expression and immunogenicity (Finlay Institute, Cuba), graduated 2007
17. **Ms Alina Puig, December 2006,** "Protection mediated by antibodies in tuberculosis" Finlay Institute, Cuba (Co-supervisor), **graduated 2008**
18. **Ms Ailin Vila, December 2006,** "Recombinant BCG expressing B cell epitopes of *M. tuberculosis*" Finlay Institute, Cuba (Co-supervisor), **graduated 2008**
19. **Ms Yanely Tirado, 2008,** "Multiepitopic T and B DNA vaccines against tuberculosis" Finlay Institute, Cuba (Co-supervisor), **graduated 2010**
20. **Mr. Edinur Hisham, 2008:** HLA polymorphism in six Malay sub-ethnic groups in Malaysia (Co-supervisor), **graduated 2010**
21. **Mr. Reinier Borrero, 2008:** "Evaluation of the immunogenicity and cross reactivity against Mtb antigens of liposomes containing lipids from *M. smegmatis*", **graduated 2010**
22. **Mohd. Amiruddin Mohd. Nawi, 2008:** "Development of *M. Tuberculosis* 16kDa Protein Detection Assay" (Main Supervisor)
23. **Mr. Mohd. Khairy Che Pa, 2009:** "Influence of PPAR γ ligand on the expression of ROR γ t in T helper 17 (Th17) cells" (Main Supervisor)
24. **Mr. Hajar Fauzan, 2009:** "Cellular response to Mtb antigens as a diagnostic marker of disease" (Co-Supervisor)
25. **Ms. Dhaniah bt Mohamad, 2010:** "Macrophage activity induced by recombinant BCG (rBCG) expressing MSP-1C of *Plasmodium falciparum*" (Co-Supervisor)
26. **Ms. Siti Nur Amalina Inche Zainal Abidin, 2010:** Co-modulation of *Strobilanthes crispus* and docetaxel on IL6 and NF κ B activities in PC3 and LNCaP cells (Co-Supervisor)
27. **Mr. Mohd. Zakuan Ismail, 2010:** "Development of tuberculosis experimental vaccine containing T and B epitopes of latency associated antigens of *M. tuberculosis*" (Main Supervisor)
28. **Ms. Nor Amila Amri, 2011:** "Association of selected microRNAs in susceptibility and resistance to tuberculosis" (Main Supervisor)
29. **Ms Anis Fadhilah bt Zulkipli 2011:** "Detection of apoptosis of the murine macrophage cell line, J774a.1 stimulated by a recombinant BCG (rBCG) expressing the merozoite surface protein-1 (MSP-1C) of *Plasmodium falciparum*" (Co-Supervisor)

GRADUATE SUPERVISION – Master of Pathology / Specialty in Immunology

1. **Dr. Naznin Muhammad, 1993**, "Immunophenotyping and DNA Analysis by Flow Cytometry" (Main Supervisor), **graduated 1996**
2. **Dr. Illunihayati Ibrahim, 1994** "Correlation between serum markers with CD4+ T cell count and percentage and total lymphocyte count in HIV-infected patients" (Main Supervisor), **graduated 1997**
3. **Dr. Nik Faizah Nik Hussein, 1996**, "Changes in CD8 activation status in HIV infected individuals using 3-colour immunoflow cytometry" (Main Supervisor), **graduated 1999**
3. **Dr. Siti Sharina Abbas, 2003** "Modulation of peroxisome proliferator-activated receptor (PPAR) γ expression and apoptosis by ciglitazone in MCF-7 cells" (Co-Supervisor), **graduated 2005**
4. **Dr. Yosvany Castillo, 2008**: Production of proteoliposomes from *M. smegmatis* as a vaccine candidate against TB. (Co-Supervisor), **graduated 2010**
5. **Dr. Lisette Rodriguez, 2008**: Evaluation of the potential capability of *M. smegmatis* as a vaccine candidate against TB. (Co-Supervisor), **graduated 2010**
6. **Dr. Norhayati Abdul Rahman, May 2010**: "Serodiagnosis of tuberculosis infection: An evaluation of short peptides of 16 kilodalton *Mycobacterium tuberculosis* protein" (Co-Supervisor)

POSTDOCTORAL / RESEARCH FELLOW SUPERVISION / DIRECT REPORTEES

1. **Dr. Nurul Asma Abdullah (postdoctoral fellow)**, 15 August 2009 – 14 March 2010, Malaysian
2. **Dr. Kamel Ait-Tahar (postdoctoral fellow)**, 2010 (3 year appointment) Oxford University, UK (British)
3. **Dr. Maria Sarmiento (Visiting Research Fellow)**, Nov 2009, (1 year appointment), Cuban
4. **Dr. Armando Acosta, (Visitng Professor)**, 2010 (1 year appointment), Cuban
5. **Dr. Tan Gim Cheong (postdoctoral fellow)**, January – August 2010, Malaysian
6. **Dr. Chee Jiun Yee (postdoctoral fellow)**, June 2011 – May 2012
7. **Dr. Md Murad Hossain (postdoctoral fellow)**, 2012 (1 year appointment), Bangladeshi

ACADEMIC AWARDS

1. Young Scientists Scholarship Award, XIVth International Congress of Tropical Medicine, Nagasaki, Japan, 1996
2. International Union of Immunological Societies Bursary 10th International Congress of Immunology, New Delhi, India, 1998
3. National Young Scientists Award, 1998
4. Special Book Award for the Children's Book "Superjaguh" (sole award winner), National Library, 2004
5. USM Best Educator Award for Health Sector, 2002, 2004
6. MAPIM Award for scientific publication, 2008
7. British Invention Show (Gold Medal), Advisor to student's project "A potential novel malaria vaccine containing blood stage specific epitopes", 14-17 October 2009, Alexandra Palace, London
8. Book Award for "The Art & Science of Tuberculosis Vaccine Development", Annual Prize for Health, Council of Scientific Societies of Health, Cuba, 2011

FELLOWSHIPS

1. Fellow, Japan Society for the Promotion of Science Fellowship, University of Tokyo, 7 January – 6 March, 1991
2. Fellow, Japan Society for the Promotion of Science Fellowship, University of Tokyo and Gunma University, 2 December 1991 – 28 February 1992
3. Fellow, Development and Industrial Technology Management Training Programme Asian Development Bank" Fellowship, King's College School of Medicine and Dentistry, London, United Kingdom. 15 August – 14 November, 1994
4. Research Fellow, European Commission "International Scientific Cooperation Initiative 'Marie Curie' Fellowship, University of Surrey, United Kingdom, January – December 1995
5. Exchange Scientist, Japan Society for the Promotion of Science, Scientist Exchange Program, Osaka University, Japan, 3 – 16 September, 2000

EXAMINER OF POSTGRADUATE THESES

1. **M. Path (Immunology)**, Examiner (*viva voce*) for 4 students completing the Immunology Posting
2. **M. Path, 2000**, "HpSS: A new silver staining method for simultaneous visualization of *Helicobacter pylori* and gastric morphology", Dr. Hartini Yahya, School of Medical Sciences, USM
3. **M. Sc., 2001**, "Demonstration of specific and antigenic outer membrane protein of *Shigella* spp. and the development of a rapid diagnostic test for shigellosis", Mrs. Kirnpal Kaur a/p Banga Singh, School of Medical Sciences, USM
4. **M. Sc., 2001**, Identification and characterization of the gene encoding a 23 kD protein specific for *Campylobacter jejuni* and its use in diagnosis", Mr. Ridhwan Abdul Wahab, School of Medical Sciences, USM
5. **M. Sc. (Sports Science) 2001**, "Moderate exercise on serum interleukins in school children", Mr. Arimi Fikri Mat Ludin, School of Medical Sciences, USM
6. **M. Path, 2001**, "Detection of p53 and Rb gene products in cervical lesions using immunohistochemistry at HUSM, Kubang Kerian, Kelantan" Dr. Wan Himratul Azna Wan Harun, School of Medical Sciences, USM
7. **M. Path (immunology) 2004**, "The association of HLA class II antigens with anti-cardiolipin antibody expression in Malays with systemic lupus erythematosus in HUSM" Dr. Nurul Khaiza Yahya, School of Medical Sciences, USM
8. **M. Sc. 2005**, "Development of a DNA Vaccine against Enterovirus 71", Wong Siew Tung, School of Graduate Studies, UPM
9. **PhD, 2006**, "Mekanisme Antiproliferasi Fraksi Separa Tulen *Hydnophytum formicarium*", Hasmah Abdullah, UKM
10. **PhD, 2007**, "Kajian sitotoksik sebatian kuasinoid dari akar *Eurycoma longifolia* Jack terhadap titisan sel kanser terpilih, Shamsul Muhamad, UKM
11. **PhD 2008**, "Apoptosis and immunomodulation of anti cancer gene therapy", John Shia Kwong Siew, UPM
12. **PhD, October 2011**, "Evaluation of a reverse tetracycline inducible system in recombinant BCG to improve stability and immunogenicity", University of Cape Town, South Africa
13. **PhD, November 2011**, , Ms Wan Rosalina binti Wan Rosli (2006142555), "Understanding interpatient variation of clinical responses among acute lymphoblastic leukemia (ALL) patients treated with 6-mercaptopurine (6-MP): A pharmacogenomics – metabolomics perspective", UiTM
14. **External Examiner**, M.Phil and PhD degrees in Immunology, University of Health Sciences Lahore, Pakistan (have accepted invitation)

CHAIRMAN FOR POSTGRADUATE VIVA VOCE

1. **Mr. Cheng Yew Chean, M.Sc.** "Age-related changes in plasma malondialdehyde (MDA), urinary 8-isoprostane and renal function in spontaneously hypertensive rats", , School of Medical Sciences, 16 March, 2004
2. **Mr. Idris Long, M.Sc.** "Kajian perbandingan kesan indometisin dan nabumeton (perencat COX-2 selektif) terhadap fungsi ginjal tikus, School of Medical Sciences, 22 April, 2004
3. **Dr. Najeeb Mohd Najeeb Abu Rub, M.Sc.** "Cleft Palate in children and adolescent: A study of arch expansion", School of Dental Sciences, 23 June 2004
4. **Dr. Azehar Al Raouf, M.Sc.** "In vitro and in vivo evaluation of locally produced polyhydroxybutyrate", School of Dental Sciences, USM, 23 June 2004
5. **Dr. Asma Hayati, M.Sc.** "The central processing role of NMDA receptors and the pathophysiological consequences of c-fos expression in stress-induced analgesia, School of Medical Sciences, 13 October, 2004
6. **Wong Siew Tung, M.Sc.** "Development of a DNA Vaccine Against Enterovirus 71, School of Graduate Studies, UPM , 13 December 2005

REVIEWER FOR ACADEMIC PROMOTION EXERCISES

1. Reviewer for Senior Lecturer's Post, 2004, 2011
2. Reviewer for Associate Professor's Post, 2001 and 2003
3. Reviewer for Professor's Post, 2005
4. Chairman of Review Committee (Biomedicine Sector) for Senior Lecturer's Post, 2005
5. Chairman of Review Committee (Biomedicine Sector) for Assoc Prof. Post, 2008
6. External Assessor for the post of Senior Fellow, Faculty of Health Sciences, UKM, Mr Pua Hiang, 7th May 2009
7. Internal *ad hoc* Reviewer for 6 Associate Professors and 3 Professors since 2008
8. External Reviewer, post of Professor, Dr. Maged Al-Okhail, King Saud University, 18 August 2011
9. External Reviewer for Application to the post of Associate Professor, Dr. Stacey Yong, Taylor's University College, November 2011

REVIEWER FOR RESEARCH GRANT APPLICATIONS

1. Review panel for FRGS Grant (9 proposals), January 1999
2. Review panel for FRGS Grant (3 proposals), November 1999
3. External reviewer for UNIMAS "The role of the apoptotic process in leukemogenesis", May 2002
4. Review panel for FRGS Grant (2 proposals), January 2003
5. Review panel for FRGS Grant (25 proposals), June 2002
6. Review panel for FRGS Grant (8 proposals), August 2003
7. Technical Committee for R&D Projects under the National Institute of Pharmaceutical & Nutraceutical (7 proposals) 29 March 2007
8. Technical Committee on "Bioconversion of Palm Oil and its products to polyhydroxyalkanoates (PHA) (biodegradable plastics)" dengan Massachusetts Institute of Technology (MIT) Program, BIOTEK, Putrajaya 19 April 2007
9. Technical Committee on Techno-Fund Techno Fund "An Independent, Malaysian, Contract Manufacturer of Clinical Biologics for Process Development and Phase I Manufacturing for an Adherent Chinese Hamster Ovary (CHO) Cell Line that is Secreting a Humanised IgG2a Monoclonal Antibody Against an Anti-Neurotrophic Growth Factor" MOSTI, Putrajaya, 3 October 2007
10. Technical Committee on Techno-Fund "Development of Novel Standardised Bird's Nest Products and Fortification with Resveratrol Extracted from *Polygonum cuspidatum* (Japanese Knotweed) coupled with nano-particle for better bioavailability" MOSTI, Putrajaya, 3 October 2007
11. Technical Panel , Seminar Presentation of FRGS Projects under Biomedical Sciences Phase 1/2006, Ministry of Higher Education (~20 proposals), PICC, Putrajaya, 17 July 2008
12. Technical Panel , Seminar Presentation of FRGS Projects under Biomedical Sciences Phase 1/2006, Ministry of Higher Education (~20 proposals), PICC, Putrajaya, 14 – 15 October 2008
13. Reviewer for Biomedical Cluster FRGS grant final reports, Pulau Banding, 26-28 October 2009
14. Reviewer, Implementation of Higher Education Excellence Program, Pan Pacific Hotel, KLIA, 17 December 2009 (1 of 11 reviewer for whole country, only one from Science-based area)
15. Review panel for FRGS Grant (~60 proposals), January 2010

REVIEWER FOR RESEARCH GRANT APPLICATIONS

16. Review panel for FRGS Grant (~40 proposals), July 2010
17. Expert Review Panel, Funding Evaluation for R&D&C, Ministry of Science, Technology & Innovation (MOSTI), July 2010 – present (2-year appointment)
18. Research University Grant Assessor, October 2010
19. Reviewer Top-Down FRGS Proposal, November 2010
20. Review panel for FRGS Grant (~60 proposals), May 2011
21. Technical Assessor, Research Project Monitoring "The Malaysian Cohort Study" Malaysian Genome Institute, MOSTI, August 2011
22. Research University Grant Assessor, October 2011

REVIEWER FOR SCIENTIFIC MANUSCRIPTS

1. **Malaysian Applied Biology** "Immunostimulatory effects of levamisole and egg white powder on humoral and cellular immunity to Newcastle disease vaccination", July 1999.
2. **The Malaysian Journal of Medical Sciences** "Disease expression and HLA types in early and late onset disease of Malaysian patient with Systemic lupus erythematosus" (Manuscript no. 07/2001/05), July 2001.
3. **J. Bioscience** "Development of a single tube system for the identification of *Staphylococcus aureus* and the simultaneous detection of clinically relevant antibiotic resistant strains" 2002.
4. **Sains Malaysiana** "Stem cells in blood cell development", 2004.
5. **Vaccine** "Protective efficacy induced by *Mycobacterium bovis* bacille Calmette-Guerin can be augmented in an antigen independent manner by use of non-coding plasmid DNA. Ref. No. ES2999/04, March 2005
6. **Malaysian Journal of Pharmaceutical Sciences** "Influence of fermented horse's milk supplementation on immunity against hepatitis A vaccine in Balb/c mice", Ref. No. 2-011 Jld.2, July 2005
7. **Cancer Cell International** "Zerumbone-Induced Apoptosis in liver cancer cells via modulation of Bax/Bcl-2 ratio", January 2007.
8. **Vaccine** "The treatment of mice infected with multi-drug-resistant *Mycobacterium tuberculosis* using DNA vaccines or in combination with rifampin" Ref. JVAC-D-08-00516, May 2008
9. **Malaysian Journal of Medical Sciences** "Identification of dengue specific B cell epitopes by phage-displayed random peptide library" 7 June 2009
10. **Journal of Biomedicine and Biotechnology** "Peroxisome proliferator-activated receptor (PPARs): Balance for survival in parasitic infections" (JBB828951)15 September 2009
11. **Malaysian Journal of Medical Sciences** "Anti-inflammatory cytokines and haematological indices in HIV seropositive adults with uncomplicated *Plasmodium falciparum* malaria" 29 October 2009
12. **Immunobiology** "Chlamydia pneumoniae Major Outer Membrane Protein (MOMP) inhibits macrophage and T cell mediated immune responses" Manuscript Number: IMBIO-D-09-00122, January 2010
13. **Malaysian Journal of Medical Sciences** "The role of the immune system in homeostasis" ID: 05-2010-063-RA, 16 May 2010

REVIEWER FOR SCIENTIFIC MANUSCRIPTS

14. **Journal of Oral Applied Science** "The immunologic properties of undifferentiated stem cells from human exfoliated deciduous teeth (SHED) and its potential application in bone regeneration" JAOS-1942-41683-211543-2-RV, 26 December 2010
15. **Malaysian Journal of Medical Sciences** "Cytoadherence and Severe Malaria" ID: 05-2010-063-RA, 15 August 2011
16. **African Journal of Microbiology Research** "Molecular cloning of *virB12* gene of *Brucella melitensis* 16M strain in pET28a vector" AJMR-11-1089, 1 November 2011

INTERACTIONS WITH INDUSTRY

1. Scientific Advisory Team, Nona Roguy, 2000 – 2002
2. Expert Reviewer for Products carried by Bioven Holdings Sdn. Bhd., 2005
3. Technical due diligence on FlaviCo – a potential dengue vaccine developed by Venture Capital Sdn Bhd and Bavarian Nordic, 2006
4. Investment Opportunities in the Biotechnology Industry, SMIDEC-MIDA Seminar on Business Opportunities, 7 March 2007
5. Business Forum on Biotechnology – Asia Pacific conference on Plant Tissue Culture and AgriBiotechnology, PWTC, Kuala Lumpur, 21 June, 2007
6. Expert Member (Vaccine), Pulau Pinang Biotechnology Satellite Project – Strategic Roadmap for the Development of Biopharmaceutical Research & Industry in the Northern Region of Peninsular Malaysia, July 2008
7. Member, CWG, Human Capital Development for the Biotechnology Industry, Malaysian Biotechnology Corporation, 2009 – present
8. Advisor to Pharmaniaga for product development and acquisition from Cuban Biotechnology Research Institutes, Havana, Cuba 7 – 10 February, 2010
9. Panel Discussant, Technology Foresight: Biotech Focus Group, Malaysian-Industry-Government Group for High Technology (MIGHT), MIGHT Building, Cyberjaya, December 2010.
10. Director Designate, Diagnostics Innovations Sdn Bhd, 2011 – present
11. Nominated CEO Designate, ProVax Sdn Bhd, 2012

INVITED TALKS

1. **Public Lecture** "Immunization of Mother and Child", organized under the CFCS Program, School of Medical Sciences, USM, at Kampung Tok Ku, Kedai Lalat, Kelantan, 21 September, 1990
1. **Management of AIDS Patients** (In-service Training for Ministry of Health Doctors and Dentists in Kelantan) "Immunology of HIV Infection", Kota Bharu Hospital, 18 August, 1993
2. **Management of AIDS Patients** (In-service Training for Ministry of Health Doctors and Dentists in Kelantan) "Immunology of HIV Infection", Kota Bharu Hospital, 27 October, 1993
2. **Joint IMMAL/Asian Scientists Meeting (WHO/TDR)** "Cloning of the region II of *P. falciparum* CSP in bacille Calmette Guerin (BCG). A possible approach to malarial vaccine development. Chiang Inn Hotel, Chiang Mai, Thailand, 2 - 3 September, 1996
3. **Italian-Malaysian Seminar on Medical Genetics and Infectious Diseases** "Cloning and expression of malarial epitopes in bacille Calmette Guerin (BCG) – a possible approach to vaccine delivery", School of Medical Sciences, Universiti Sains Malaysia 15 October, 1998
4. **WHO/TDR Steering Committee on Vaccine Discovery Research (SC/VDR)** "Cloning of the *Plasmodium falciparum* MSP-1C epitope into *Mycobacterium smegmatis* using assembly PCR", University of The Philippines, Manila 1-2 June 1999
5. **Seminar on HIV/AIDS** –Social implications, Laws and Regulations. Recent advances in the management of HIV/AIDS "The immunopathogenesis of HIV infection" School of Medical Sciences, USM, 14-15 August, 1999
3. **The Malaysian Society of Allergy & Immunology**, Continuous Medical Education "IgE-mediated Immune Response", organized by Penang Medical College, 20th August, 2000
6. **Second Malaysian Society of Allergy & Immunology Congress** "Genetics and Atopy", J W Marriot Hotel, Kuala Lumpur, 19-21 January 2001
7. **Global Alliance for TB Drug Development** Conference on R&D Coalition for TB Drug Development in Asia. "The use of recombinant BCG for the delivery of candidate vaccine antigens" Penang Parkroyal Resort, 2-4 May, 2001
8. **Malaysian Society for Molecular Biology and Biotechnology** 11th. Scientific Meeting "Molecular Approaches to Vaccine Development – Special Reference to the use of recombinant BCG", Hyatt Regency Saujana Hotel, Subang, Kuala Lumpur, 14-16th. May, 2001
9. **First ASEAN Conference of Medical Sciences** "Vaccinology: The Way Forward", Renaissance Hotel, Kota Bharu, 19 - 21 May, 2001.

INVITED TALKS

10. **First International Workshop on Adjuvants** "Recombinant BCG expressing selected epitopes of malaria and tuberculosis", Havana Cuba, 5 – 8 Disember, 2001
11. **Research Cluster Formation** "TB Research Cluster" Main Campus USM, 1 Mac 2002
12. **R&D Workshop:** Cluster-Based Research, Success Story – TB Cluster Research Group, USM Engineering Campus, Seberang Prai Selatan, 17 April, 2002
13. **R&D Workshop:** Introduction to Cluster-Based Research: - TB Cluster Research Group, Hotel Vistana, Pulau Pinang, 28 Mei 2002
14. **First UMS Biotechnology Symposium:** "Potential Approaches Towards a Vaccine Against Tuberculosis – Recombinant BCG and DNA Vaccine", Universiti Malaysia Sabah 3 – 5 July, 2002
15. **First UMS Biotechnology Symposium:** "Immunology of Tuberculosis" (*speaking on behalf of Dr. JoAnne Flynn, University of Pittsburg School of Medicine*), Universiti Malaysia Sabah 3 – 5 July, 2002
16. **Fourth Malaysian Congress of Allergy & Immunology**, "Acute Allergic Reaction", Nikko Hotel, Kuala Lumpur, 14 – 16 March, 2003
17. **Seminar on Enhancing Concepts in Biology** in Teaching and Learning: "Immunology", State Education Department and Universiti Sains Malaysia, 2 – 3 July, 2003
18. **Seventh Family Medicine Specialist Scientific Conference**, "Updates on development of Malarial Vaccines", Grand Bluewave Hotel, Shah Alam, 25 August 2003
19. **Seminar Halatuju R&D USM Dan Peranan Pelantar Penyelidikan USM**, School of Pharmaceutical Sciences, 28 – 29 Jun 2005
20. **Biotechnology Talk - MTDC Awareness Programme:** " Vaccines - Development & Challenges, Crown Princess Hotel, Kuala Lumpur, 27 December 2005
21. **Impact China II**, "Opportunities in the Biotechnology Industry in Malaysia, Shangri-La Hotel, Beijing, 21 – 23 May 2006
22. **Bengkel Halatuju Program Bioteknologi IPTA**, "Dasar Bioteknologi Negara", penceramah dan peserta. Hotel Pan Pacific KLIA, 2 – 4 June 2006
23. **"Overview on Biotechnology"** Taylor's College, Subang Jaya, 18 September 2006

INVITED TALKS

24. **National Seminar & Workshop on Forest Biotechnology.** Biotechnology: Policy, R&D and funding issues towards resource conservation and generation of wealth from tropical rainforest, FRIM, 4 December 2006
25. **Ceramah/Motivasi Untuk Majlis Makan Malam Jabatan Patologi Kimia,** "Membudayakan Penyelidikan Dalam Makmal Sains Perubatan", Oriental Restaurant , 26 Disember 2006
26. **"Career Prospects in Biotechnology",** Technology Park Malaysia, 13 February 2007
27. **Seminar Halatuju Bioteknologi Negeri Kelantan,** "Dasar Bioteknologi Negara dan Peranan Malaysian Biotechnology Corporation, anjuran Kelantan Biotech Corporation Sdn Bhd, Hotel Perdana, Kota Bharu, 4 March 2007
28. **Workshop on The Way Forward Creating Competitive and Innovative SMEs,** "Investment Opportunities in the Biotechnology Industry", Manhattan Ballroom, Berjaya Times Square Hotel & Convention Centre, Kuala Lumpur, 6 & 7 March 2007
29. **Malaysia's Biotech Value Proposition,** University of Lyon, France, 13 March 2007
30. **Biotechnology 101 for the Media,** "Biotechnology for Wealth Creation and Societal Well-Being", KLCC, 12 April 2007
31. **International Conference of Medical Sciences** "Biotechnology – The Economic Booster, USM Health Campus, 26 – 28 May 2007
32. **"Biotechnology: Wealth Creation & Societal Wellbeing"** – to the Board of Directors, Phamaniaga Bhd., Bukit Raja, 19 June 2007
33. **Business Forum on Biotechnology** – Asia Pacific conference on Plant Tissue Culture and AgriBiotechnology, PWTC, Kuala Lumpur, 21 June, 2007
34. **Third Education – Industry Dialogue 2007 (Moderator),** Moving On, Moving Ahead, Time for Action. Sunway University College, Bandar Sunway, Petaling Jaya, 2 July 2007
35. **Second Asia Pacific Conference on Public Health,** "Updates on Malaria Vaccine Development", Sheraton Subang, Subang Jaya 3 July 2007
36. **Seminar Sains & Teknologi sempena Program Pembangunan Sains dan Teknologi Peringkat Negeri Kelantan,** "Bioteknologi Sebagai Penggerak Ekonomi & Sumber Kekayaan Baru", Dewan Teratai, Kota Darul Naim, 15 July 2007.
37. **Value Creation in Biotechnology, (guest speaker).** Malaysian Society for Applied Biology, Fakulti Sains & Teknologi, UKM, 26 August 2008

INVITED TALKS

38. **"Biotechnology for Public Health"** Public Health Conference, Plenary Lecture, Berjaya Times Square Hotel & Convention Centre, 13 November 2008
39. **"Networking & Linkages"** Proposal Writing Workshop, Health Campus, 13 December 2009
40. **"Writing a Grant Proposal"** Scientific Writing Workshop, PPSP, 16 March 2010
41. **"The influence of environmental changes towards emerging and re-emerging diseases"**, National Conference on Environment & Health, 18 March 2010
42. **"Platform technologies for developing TB vaccine candidates"**, University of Cape Town, South Africa, 14 April, 2010
43. **"Efficacy of recombinant BCG expressing *in silico*-predicted epitopes of *M. tuberculosis*"** University of Stellenbosch, South Africa, 16 April, 2010
44. **"Strategizing for Success: Principles of a Good Research Proposal"**, AKEPT (Higher Education Academy), 29 September 2010
45. **"Reviewing Grant Applications: Reviewer's Perspective"**, AKEPT (Higher Education Academy), 29 September 2010
46. **"Strategies in Publication"**, Manuscript Writing Workshop, Sutra Beach Resort, Terengganu, 15-18 October 2009
47. **"The origin of the Malays"**, Dialogue on the Malay Civilization, Universiti Pendidikan Sultan Idris, Perak, 5 April, 2011
48. **"Forensic Science Education: A Critical Review"** Forensic Science Society Seminar, Chemistry Department, Malaysia, 21 April, 2011
49. **"Efficacy of recombinant BCG expressing *in silico*-predicted epitopes of *Mycobacterium tuberculosis*"** 36th Annual Conference Malaysian Society for Biochemistry and Molecular Biology, Eastin Hotel, Petaling Jaya, 27 July 2011
50. **Research: An Academician's *Raison D'être*: Nurturing My Research Career**. Research Colloquium, Faculty of Medicine, UiTM, Hotel Ancasa, Port Dickson, 29 July 2011
51. **"Value Propositions: Halal Non-Conjugated Meningococcal ACWY Vaccine"**, Halal Development Corporation Syariah Committee, Bandar Utama, 18 October 2011
52. **Forensic Science Education & Training**. 2nd International Forensic Science Symposium, Le Meridien Hotel, Kuala Lumpur, 16 November 2011

INVITED TALKS

53. **Development of Diagnostics and Vaccines for Tropical Diseases: A USM-Cuba Collaboration**, Review Workshop on International Biotechnology R&D Collaboration and Best Practices, MOSTI 19 – 20 November 2011
54. **“Nurturing A Research Career”**, Manuscript Writing Workshop, Cinta Sayang Golf & Country Resort, 24 – 27 November 2011

CHAIRMAN / FACILITATOR FOR WORKSHOP / SEMINAR / CONFERENCES

1. Treasurer, Organizing Committee, Translation Workshop, DBP/PPSP, 6 - 8 March, 1991
2. Member of Organizing Committee, SEA Seminar on Immunology and Workshop on Biotechnology, 2 - 10 February, 1992, PPSP, USM
3. Chairman and Course Coordinator, Postgraduate Intensive Course in Immunology and Rheumatology, PPSP/IDP Australia, 3 - 10 August 1992, PPSP, USM
4. Member, Organizing Committee and Scientific Sub-Committee, Fourth Combined Conference of the Malaysian and Singapore Society of Pathologists (MSSP), 12th September, 1993, PPSP, USM
5. Member, Organizing Committee and Technical Sub-Committee, Biotechnology Workshop Series 2: Gene Transfection: Techniques and Applications. Jointly organized by the Medical Biotechnology Group, PPSP, USM and Dept. Biochemistry, University of Western Australia. 25 - 29 May, 1996
6. Chairman, Oral Session 2, Fourth National Conference in Medical Sciences, School of Medical Sciences, Universiti Sains Malaysia, 8 - 9 June, 1998
7. Chairman, Organising Committee, Italian-Malaysian Seminar on Medical Genetics and Infectious Diseases School of Medical Sciences, Universiti Sains Malaysia 15 October, 1998
8. Committee Member and Chairman of Keynote Address and Free Papers Session II, Malaysian Society for Immunology, August, 1999
9. Co-chairperson, Symposium 2, 2nd. Malaysian Society of Allergy and Immunology Congress, 19-21 January 2001
10. Facilitator, Critical Appraisal Workshop, M.Med. students Year 2, 2 September 2001
11. Chairman, Drug Evaluation & Development Session, Global Alliance for TB Drug Development Conference on R&D Coalition for TB Drug Development in Asia. Penang Parkroyal Resort, 2-4 May, 2001
12. Chairman and Coordinator, Forensic Science Programme Workshop, Perdana Hotel, Kota Bharu, 5-7 October 2001
13. Facilitator and Speaker, "Workshop on producing Quality Thesis and Dissertations: Training the Trainers", 16 - 18 January 2003
14. Co-chairperson,, 4th. Malaysian Society of Allergy and Immunology Congress, Nikko Hotel, Kuala Lumpur, 14 - 16 March 2003

CHAIRMAN / FACILITATOR FOR WORKSHOP / SEMINAR / CONFERENCES

15. Speaker and Facilitator, INFORMM Postgraduate Workshop Series 2: Research Output", "Introduction to journals and impact factor", 7 – 9 March, 2004
16. Chairman, Plenary Lecture, 8th National Conference of Medical Sciences, 9 May, 2003
17. Chairman, Plenary Lecture, 9th National Conference of Medical Sciences, 22 May, 2004
18. Chairman, Public Lecture by Dr. Manual Raices, "The development of Cuban Science", Dewan Budaya, USM, 28 May 2004
19. Member, USM Postgraduate Exhibition and Awards Committee, 2004
20. Member, Scientific Committee, International Workshop on Tuberculosis Vaccine, Varadero, Cuba, 2007
55. Expert Member, Learning Committee for MBA (Biotechnology Management), UTM, City Campus, Jalan Semarak, 28 March 2007
56. Chairman, Organising Committee, BioMalaysia 2008 Conference, 2008
57. Chairman, Healthcare Biotechnology Track, BioMalaysia2008, KLCC, 7th October 2008
58. Chairman, Panel Discussion on "Kelestarian Alam Sekitar Asas Kesejahteraan Kesihatan", National Conference on Environment and Health, Grand Riverview Hotel, Kota Bharu, Kelantan, 29 October 2008.
59. Discussant, Live TB Vaccines Meeting – Safety and Regulatory Issues for Live TB Vaccines, WHO Headquarters, Geneva, Switzerland, 6-7 April 2009
60. Facilitator, PPSK Manuscript Writing Workshop, 15-18 October 2009, Sutra Beach Resort, Terengganu
61. Forum Panelist, Colloquium on Health Sciences & Engineering Technology (CHSET 2011), School of Health Sciences, USM, 17 October 2011
62. Facilitator, PPSK Manuscript Writing Workshop, 24 - 27 November 2011, Cinta Sayang Resort, Sg Petani, Kedah

CONSULTANCY

1. Invited Discussant (representing Malaysia) at "Quality Control Workshop on Immunophenotyping by Flow Cytometry, organized by Becton Dickinson Europe, Hotel Duna Intercontinental, Budapest, Hungary, 26 August 1992
2. Consulted for various immunological diagnostic tests offered (in particular for HIV monitoring and leukemia diagnosis) for HUSM, Kota Bharu Hospital and other regional Hospitals (1991 – 1994)
3. Consulted for assessment of flow cytometric reagents by General Scientific Sdn Bhd, (Dako regional office), 1993
4. "Temporary Advisor", Joint IMMAL/Asian Scientists Meeting (WHO/TDR). Chiang Inn Hotel, Chiang Mai, Thailand, 2 - 3 September, 1996
5. "Temporary Advisor", WHO/TDR Steering Committee on Vaccine Discovery Research (SC/VDR) University of The Philippines, Manila 1-2 June 1999
6. Supervision for a Multimedia development (based on the Immunology book Superjaguh) project for interactive CD-ROM, DBP, 2002
7. Scientific Consultant, Research in recombinant BCG for the Direction of Biotechnology, Finlay Institute, Cuba, 2002 - present
8. Technical Advisor to Minister of Higher Education during the latter's visit to Cuba, November 2004
9. Technical Advisor to Minister of Science, Technology and Innovation during the latter's visit to Cuba, February 2005
10. Discussant, "Naming of New Faculty" UTM City Campus, Jalan Semarak, 6 September 2006
11. Expert Member, Learning Committee for MBA (Biotechnology Management), UTM, City Campus, Jalan Semarak, 28 March 2007
12. Consultant & Coordinator, Intensive Course for the Malaysian Police Officers, Malaysia Royal Police College, Cheras, Kuala Lumpur, February to June 2007
13. Discussant, Live TB Vaccines Meeting – Safety and Regulatory Issues for Live TB Vaccines, WHO Headquarters, Geneva, Switzerland, 6-7 April 2009
14. Member, Advisory Committee for the National Strategic Panel in Biotechnology, Ministry of Higher Education, 18 June 2007 – 17 June 2009

CONSULTANCY

15. Consultant & Coordinator, Intensive Course for Officers of the Chemistry Department, MOSTI, 2010
16. Member, Steering Committee, Technology Acquisition from Nanobiotix, France, BiotechCorp December 2009 – December 2011
17. Discussant, Brainstorming for Critical Agenda Projects for Centres of Excellence, Strategic Plan for the Ministry of Higher Education, January 2010
18. Advisor and Head of Delegation for Acquisition of Meningococcal Vaccine from Finlay Institute, Cuba, 4 – 11 February 2010
19. Panel Member, Research University Assessment, Ministry of Higher Education, March 2010 – present
20. Member, Panel of Assessors, Funding of R & D & C, Ministry of Science, Technology & Innovation (MOSTI), July 2010 – June 2012
21. Discussant, Identification of Biotechnology Priority Areas for 10th Malaysia Plan, Ministry of Science, Technology & Innovation (MOSTI), August 2010

CONTINUOUS EDUCATION

1. **Journal Club** (New Knowledge) "T cell Recognition", Department of Immunology, 26 May, 1991
2. **Clinico-Pathological Conference** "Myasthenia Gravis in Pregnancy", School of Medical Sciences, USM 25 July 1991
3. **Clinico-Pathological Conference** "ANA in a prototype of multisystem disease of autoimmune origin", School of Medical Sciences, USM 29 August 1991
4. **Intensive Course in Rheumatology and Immunology** "The Normal Immune Response" School of Medical Sciences, USM 3 August 1992
5. **Intensive Course in Rheumatology and Immunology** "The Human Major Histocompatibility Complex" School of Medical Sciences, USM, 3 August 1992
6. **Journal Club** (New Knowledge) "Cytokines in Asthma", Department of Immunology, 27 September 1992
7. **Journal Club** (New Knowledge) "Current Vaccine Strategies against Malaria", Department of Immunology, 7 March 1994
8. **Journal Club** (New Knowledge) "Immunology of Malaria", Department of Immunology, 26 February 1995
9. **Public Information** "In search for a better vaccine against meningitis: Use of random phage display library to identify potential protective molecules for vaccine development" hosted members of the Meningitis Trust UK, School of Biological Sciences, University of Surrey, United Kingdom, 26 September, 1997
10. **Health Campus Research Presentation** "The potential use of recombinant BCG as malaria vaccine", 27 May 1999
11. **Clinico-Pathological Conference** "Acquired supernumerary kidney", School of Medical Sciences, USM 6 July 2000

DIAGNOSTIC SERVICE
<ol style="list-style-type: none"> 1. Responsible for supervising all M. Path. (Immunology) students on diagnostic services for immunophenotyping (HIV status monitoring and leukemia diagnosis) from 1992 to 1994 and 1996 (4 years) 2. Supervision of Porter System for diagnostic tests carried out for HUSM, 1993 3. Responsible for the supervision of Quality Assurance Program for selected diagnostic Immunology tests performed under the Australian Quality Assurance Program, 1994

UNIVERSITY ADMINISTRATIVE POSTS HELD
Major Posts Held
<ol style="list-style-type: none"> 1. Head of Department, Dept. Immunology, School of Medical Sciences (1992 – 1994) – 2 appointments 2. Resident Tutor, Distance-Learning Students USM, Kota Bharu Centre, 1996 3. Founding Deputy Dean, School of Health Sciences (2000 – 2004) – 2 appointments 4. Founding Chairman, Forensic Science Program, (2000 – June 2005) – 3 appointments 5. Founding Dean of Research (Biomedical and Health Sciences) (1 August 2004 – 31 March 2006) – 2 appointments 6. Coordinator, (Virtual) Centre for Vaccine Research & Development, 5 January 2011 – 31 December 2012

Membership of Major University Committees

1. Member, Chemicals, Reagents and Drugs Technical Committee, 1993
2. Member, Technical Committee for Renovation, USM Health Campus, 2000 – 2002.
3. Chairman, "Fundamental Research Grant Scheme" Assessment Panel, Health Sector, 2002 – present
4. Committee Member, Clinical Research Platform, August 2003 - present
5. Discussant and Speaker, USM Innovation System 1 – 3 October 2004, Grand Plaza Parkroyal Hotel, Penang
6. Member, Assessment Committee for Postgraduate Scholarships – Postgraduate Research Scholarship, Special Postgraduate Scheme, Vice Chancellor's Award, 2005
7. Facilitator and Speaker for various Talks for the "Teaching & Learning Certificate" and "Penilaian Tahap Kecekapan (PTK) 4 and 5, 2003 – present
8. Selection Committee for Sanggar Sanjung (Scientific Publication Award), 2002, 2003, 2004
9. Selection Committee for Sanggar Sanjung (Best Educator Award), 2002, 2003, 2004
10. Chairman & Member, Promotion Selection Committee for Senior Lecturer, Associate Professor and Professor, Health Sector, 2005 – 2011
11. Facilitator, Methodology and Statistical Skills, Institute of Graduate Studies, USM, 2005
12. Member, Jawatankuasa Pemandu Sistem Inovasi USM, July 2005 to March 2006
13. Group Leader, Blue Ocean Strategy Practitioners Training, January – May 2010
14. Member, Disciplinary Committee for Investigation into Unethical Practice, July 2010
15. Chairman, Committee for Assessment of Tender for Equipment under the USM-IDB Project, August 2010 - 2011

Membership of School Committees	
1.	Member, Laboratory-Based Committee, 1990 – 1994
2.	Secretary, Glossary and Translation Sub-Committee, School of Medical Sciences, USM, 1991 – 1992
3.	Member, School of Medical Sciences Postgraduate Committee, 1992 – 1993
4.	Member, School of Medical Sciences Research Committee, 1993 – 1994
5.	Coordinator, Host and Environment Block, Phase I MD Program, 1991 – 1993, 1998
6.	Member, Institute for Research in Molecular Medicine (INFORMM) [previously, Medical Innovation and Technology Development], 2000 – present.
7.	Panel member, Committee for Confirmation of Academic Posts, School of Health Sciences, 2003 - 2004
8.	Chairman, Promotion Advisory Committee, 2004 - 2006
SERVICE TO THE COMMUNITY	
National Level	
1.	Representative to member "Brainstorm: Malaysian Education System" Committee, Institute of Strategic and International Studies (ISIS), June/July 2002
State Level	
1.	Panelist Forum on Excellence for SPM 2003 "Generasi Pewaris Mencipta Kegemilangan", USM Health Campus, 8 May, 2003
2.	Rakan Sains (A scientific program for Secondary Schools), Panelist "Biotechnology from the Islamic Perspective", USM Health Campus, 28 February 2004
3.	Rakan Sains (A scientific program for Secondary Schools), Lecture "Sains Untuk Diri dan Negara", USM Health Campus, 26 February 2005

District/University/School/Village Level

1. Member, Safety Zone for Sector "E", Kubang Kerian District, 2001 - present
2. Member, Special Committee for the Establishment of Nursery / Kindergarten Centre for USM Health Campus Staff, 1993
3. Talk and Discussion on Career Prospects, Form Five Students, 20 May 1999
4. External Project by MRSM students (Nursyazana, Rashidah, Norazah, Ainniah, on "DNA Fingerprinting" 2001/02
5. External Project by MRSM students (Omar Saufy, Sayed Amrul Muazam, Zulkhairi) on "DNA Fingerprinting" 2001/02