

## CURRICULUM VITAE

**Amir Hadjinoormohammadi**

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### EDUCATION

Period	Course
03/1995 – 5/1998	PhD, School of Veterinary Science, Melbourne University, Melbourne, Australia
5/1994	A course on Poultry Diseases instructed by professor R. J. Jullian (Guelph University, Canada), School of Veterinary Science, Tehran University, Tehran, Iran
09/1984 – 10/1990	Master of Veterinary Science, School of Veterinary Science, Tehran University Tehran, Iran

### EMPLOYMENT

Since	Until	Employer	Type
1/08	now	School of Veterinary Science, Melbourne University	Associate Professorr
1/05	12/07		Senior Lecturer
05/99	12/04	School of Veterinary Science, Melbourne University	Research Fellow, Avian pathologist
05/98	5/99	The Walter and Elisa Hall Institute of Medical Research, Melbourne, Australia	Research Fellow
02/98	05/98	School of Veterinary Science, Melbourne University	Research Assistant
10/90	09/94	School of Veterinary Science, Urmia University, Urmia, Iran	Academic

### RESEACH PROJECTS

#### *Undergraduate thesis/research project*

The subject of my undergraduate thesis/research project was a survey on the diseases affecting young chickens in North-Central Iran. These studies revealed that the highest-occurring disease, yolk sac infection, was due to contamination of the hatcheries with *E. coli* and *Salmonella spp.* A second most significant disease, Aspergillosis, also found to be originated from contaminated hatcheries.

#### *Postgraduate (PhD) project*

The subject of my Ph.D. project was "Immunity to, and pathogenesis of, avian mycoplasma infections". The major finding of my project was the characterisation of the major membrane proteins of *Mycoplasma synoviae*, which are involved in pathogenesis of and immunity to infection. These findings also resulted in a commercial diagnostic test and several publications and presentations. Also, I identified a novel molecular mechanism, which controls the phase-variable expression of the membrane proteins, leading to a chronic infection.

### *Postdoctoral project at Walter and Eliza Hall Institute of Medical Research*

My postdoctoral project at Walter and Eliza Hall Institute of Medical Research, entitled induction/enhancement of Th1 immunity to the human pathogen *Leishmania major* promastigote surface antigen-2 (PSA-2) was mainly involved in induction/enhancement of Th1 responses against the human pathogen *Leishmania major*. In this context, I applied two different strategies: co-administration of cytokine genes with the PSA2 DNA vaccine and targeting leishmania antigens to antigen presenting cells. The major focus of the cytokine gene therapy was the Th1 cytokines IL-12 and GM-CSF. I designed vector constructs for the expression of these cytokines and showed that they were able to induce expression of bioactive cytokines in mammalian systems. Studies on antigen presenting cells were mainly centered on dendritic cells and macrophages. I established methods for transfection of the skin-derived dendritic cell lines AG-101 and primary dendritic cells and showed that injection of the transfected AG-101 cell line can initiate a strong Th1 response against the parasite in C57-B1/6 mice. These findings have been detailed in three manuscripts as shown in publications list.

### *Postdoctoral project at the University of Melbourne*

My postdoctoral research project at the University of Melbourne was mainly focused on investigation on the safety and efficacy of the two mycoplasma vaccines MS-H and ts-11, an on improving serological assays for detection of immunological responses to these vaccine strains.

### *Current projects at the University of Melbourne*

My current projects at the School of Veterinary Science are involved in supervision of 2 research assistants, 2 lab managers, an animal house manager, two research fellows and supervision/co-supervision of 7 postgraduate students. These projects are focused on determining of detailed molecular mechanisms for *M. synoviae* surface antigens variation, developing serological assays (using molecular biological tools) for mycoplasma infections in poultry and molecular epidemiology and immunology of avian diseases in particular Infectious Laryngotracheitis, chlamydiosis, inclusion body hepatitis, infectious bronchitis and chicken infectious anemia. In addition, I am currently setting my laboratories to become a reference centre for diagnosis of and research on poultry diseases in Australia.

Titles of the major projects directly supervised at the University of Melbourne:

- Infectious Bronchitis (a contagious disease of poultry) in Australian layer flocks: A focus on egg quality.
- Investigation of Inclusion Body hepatitis (a contagious disease of poultry) outbreaks in Australian meat breeder/broiler flocks and establishment of an avian adenovirus typing facility and service.
- Investigation of the prevalence of chlamydiosis, a bacterial disease, in the Australian chicken meat industry.
- Transfer of diagnostic technologies from research laboratories to a core diagnostic facility established at the University of Melbourne for the benefit of the Australian poultry industry.
- Analysis of virulence of Australian Infectious Laryngotracheitis (a contagious disease of poultry) field isolates and vaccine strains.
- The role of high-frequency antigenic variation in the pathogenesis of mycoplasma infections.
- Safety and efficacy of the *Mycoplasma synoviae* vaccine strain MS-H in commercial poultry.

Titles of the major projects I was involved in as a co-investigator:

- Control and characterisation of highly pathogenic avian influenza strains in poultry in Indonesia
- Genomic approaches to novel vaccines
- Chicken Infectious Anaemia vaccines
- Pasteurella multocida vaccine

## **TEACHING/TRAINING**

### *Undergraduate (Veterinary) students*

I am currently responsible for delivering 20 hours of lecture and conducting 7 practical classes for the fourth year Veterinary undergraduate students. In addition, I coordinate the subject “Birds and Non-domestic Animals”. According to the quality of teaching survey, the mean for the question 2 (“this subject was well taught”) was 3.6 in 2005. This figure for 2006 and 2007 were 3.9 and 3.8 respectively demonstrating a positive trend in student’s satisfaction with the subject taught by me.

In addition, I have been responsible for training of several undergraduate veterinary students who opted for Avian Medicine as their electives.

I have supervised/co-supervised five PhD students to completion, four research assistants and one postdoctoral fellow. Currently I supervise/co-supervise ten PhD students, one research assistant and two postdoctoral fellows.

## **CONTRIBUTION TO THE FIELD OF POULTRY DISEASES**

Currently practice as a registered veterinarian in the field of poultry diseases

Currently act as an associate editor for the journals “Avian Pathology” and “Avian Diseases”

A member of the Australian Poultry CRC scientific committee

Previously acted as a member of the Australian Poultry CRC commercialisation committee

Previously acted as a program manager for the Australian Poultry CRC

Act as a course coordinator of the Avian Health Online

An invited speaker at an international poultry conference.

Acted as a member of several international Scientific Program Committees

## **LEADERSHIP**

Currently Head the division of Avian Medicine at the faculty of veterinary Science, Melbourne University, leading a team of 13 research or professional staff. My division consists of 3 separate and 4 shared laboratories and three animal houses. Three of these laboratories were acquired since I was employed as a senior lecturer in 2005. Leading the Avian Medicine division involves overseeing the research and commercial activities (that support research within the division), interaction with other researchers using the Avian Medicine facilities, signing and/or monitoring quality assurance and diagnostic test results, implementing regulations (such as those of National Association of Testing Authorities, International Organization of Standardization, etc), and overseeing the budget. I oversee a number of operating accounts (excluding research accounts) of approximately \$0.5 m in total.

## **RESEARCH GRANTS**

<b>Funding body</b>	<b>My role</b>	<b>Years funded</b>
RIRDC	Co-investigator	2009-12

CRC	Co-investigator	2007-2010
AECL	Co-investigator	2007-10
RIRDC	Primary investigator	2006-09
RIRDC	Primary investigator	2006-09
CRC	Primary investigator	2006-09
ACIAR	Co-investigator	2007-10
CRC	Co-investigator	2005-08
CRC	Co-investigator	2005-08
CRC	Co-investigator	2005-08
AECL	Primary investigator	2003-05
ARC	Primary investigator	2001-04

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### AWARDS and PRIZES

Funding body	Year granted
Houghton Trust Lecture Award – the most prestigious international award in the area of avian diseases	2007
Houghton trust (Avian Pathology journal) travel grant	2000
Business plan competition award (Rural Industries Research & Development Corporation)	2000
The best poster presentation award at Fourth Asia Pacific Poultry Health Conference	1998
Rural Industries Research & Development Corporation Travel Grant	1998
Postgraduate writing-up award	1998
Melbourne University travel scholarship grant	1997
Sunshine postgraduate research student prize	1997

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### PUBLICATION LIST

#### Thesis:

1. Noormohammadi, A. H. - Phase-variable antigens of *Mycoplasma synoviae*. Ph.D thesis, The University of Melbourne, (1998) – contribution 100%
2. Noormohammadi, A. H. - A survey of the diseases affecting chickens less than two-weeks old. MVSc thesis, The University of Tehran, (1990) – contribution 100%

### Publications in refereed journals:

1. Ghorashi, S. A., A. H. Noormohammadi and P. F. Markham, Differentiation of *Mycoplasma gallisepticum* strains using PCR and high resolution melting curve analysis, Microbiology, 2010, In Press
2. Devlin J. M, A. Viejo-Borbolla, G. F. Browning, A. H. Noormohammadi, J. R. Gilkerson, A. Alcamí and C. A., Hartley, Evaluation of immunological responses to a glycoprotein G deficient candidate vaccine strain of infectious laryngotracheitis virus. Vaccine. 2010 Feb 3;28(5):1325-1332.
3. Feberwee, A., Morrow, C.J., Ghorashi, S. A. H. Noormohammadi, A. and W.J.M. Landman, Effect of a live *Mycoplasma synoviae* vaccine on the production of eggshell apex abnormalities after a dual infection with *M. synoviae* and IBV D1466, Avian Pathology, 2009 Oct;38(5):333-40
4. Robertson, Tara, S. Bibby, D. O'Rourke, T. Belfiore, H. Lambie and A. H. Noormohammadi, Characterisation of *Chlamydiaceae* species using PCR and high resolution melt curve analysis of the 16S rRNA gene, Journal of Applied Microbiology, 2009 May 20
5. Hewson, Kylie, A. H. Noormohammadi, Joanne Devlin, Karim Mardani and Jagoda Ignjatovic, Rapid detection and non-subjective characterisation of infectious bronchitis virus isolates using high resolution melt curve analysis and a mathematical model, Archives of virology, 2009, 154 (4):649-60
6. Tivendale, K., A. H. Noormohammadi, and G. F. Browning. The conserved portion of the outative virulence region contributes to virulence of avian pathogenic *E. coli*. Microbiology. 2009 Feb;155(Pt 2):450-60
7. Kirkpatrick N. C., Hayley P. Blacker, Wayne G. Woods, Robin B. Gasser and Amir H. Noormohammadi, A PCR-Coupled High Resolution Melting (HRM) Curve Analytical Approach for the Monitoring of Monospecificity of Avian *Eimeria* specie. Avian Pathology, 2009 Feb;38(1):13-9
8. Steer, Penelope A., N. C. Kirkpatrick, D. O'Rourke and A.H. Noormohammadi, Classification of Fowl Adenovirus Serotypes Using High Resolution Melting Curve Analysis of the Hexon Gene Region, Journal of Clinical Microbiology, 2009 Feb;47(2):311-21. Epub 2008 Nov 26
9. Muneta Y., I. S. Panicker, A. Kanci, D. Craick, A. H. Noormohammadi, A. Bean, G. F. Browning, P. F. Markham. Development and immunogenicity of recombinant *Mycoplasma gallisepticum* vaccine strain ts-11 expressing chicken IFN-gamma. Vaccine. 2008 Aug 14
10. Mardani, K., A. H. Noormohammadi, J. Ignatovic, P. Hooper and G. F. Browning. Infectious bronchitis viruses with a novel genomic organization, 2008, Journal of Virology, 82(4):2013-24. Epub 2007.
11. Vijaya, Janardhana, M. E. Ford, M. P. Bruce, M. M. Broadway, T. E. O'Neil, A. J. Karpala, M. Asif, G. F. Browning, K. A. Tivendale, A. H. Noormohammadi, J. W. Lowenthal, A.G. D. Bean. IFN-gamma enhances immune responses to *E. coli* infection in the chicken. Journal of interferon and cytokine research, 2007 27(11):937-46.
12. Noormohammadi, A.H. Role of phenotypic diversity in pathogenesis of avian mycoplasmosis. Avian Pathology. 36 (6) 2007, 439-444.
13. Jeffery, N., R. B. Gasser, P. A. Steer and A. H. Noormohammadi. Classification of *Mycoplasma synoviae* strains using single-strand conformation polymorphism and high resolution melting curve analysis of the *vIhA* gene single copy region. Microbiology, 153 (8) 2007, 2679-2688.
14. Noormohammadi, A.H., F. Hemmatzadeh and K. G. Whithear. Safety and efficacy of the *Mycoplasma synoviae* MS-H vaccine in turkeys. Avian Diseases, 51 (2) 2007, 550-554.

15. Kaffashi A., M. Allot, P. Guo, A.H. Noormohammadi and G. F. Browning. Viral load in 1-day-old and 6-week-old chickens infected with chicken anaemia virus by the intraocular route. *Avian Pathology*, 35 (6) 2006, 471-474.
16. Devlin J. M., G.F. Browning, C.A. Hartley, N.C. Kirkpatrick, A. Mahmoudian, A.H. Noormohammadi and J.R. Gilkerson. Glycoprotein G is a virulence factor in infectious laryngotracheitis virus. *Journal of General Virology*, 87 (10) 2006, 2839-47.
17. Kirkpatrick N. C., A. Mahmoudian, C. A. Colson, J. M. Devlin, and A. H. Noormohammadi, Relationship between mortality, clinical signs and tracheal pathology in infectious laryngotracheitis. *Avian Pathology*, 35 (6) 2006, 449-453.
18. Jones, J. F., P. C. Scott, K. G. Whithear, and A. H. Noormohammadi. Duration of immunity with *Mycoplasma synoviae*: Comparison of the live attenuated vaccine MS-H (Vaxsafe MS) with its wild type parent strain, 86079/7NS. *Avian Diseases*, 50 (2) 2006, 228-231.
19. Jones, J. F., P. C. Scott, K. G. Whithear, and A. H. Noormohammadi. Determination of the effective dose of the live *Mycoplasma synoviae* vaccine, Vaxsafe MS (strain MS-H), as determined by protection against experimental challenge. *Avian Diseases*, 50 (1) 2006, 88-91.
20. Jones, J. F., P. C. Scott, K. G. Whithear, and A. H. Noormohammadi. Onset of immunity with *Mycoplasma synoviae*: Comparison of the live attenuated vaccine MS-H (Vaxsafe MS) with its wild-type parent strain (86079/7NS). *Avian Diseases*, 50 (1) 2006, 82-87.
21. Kirkpatrick N. C., A. Mahmoudian, D. O'Rourke and A. H. Noormohammadi, Differentiation of infectious laryngotracheitis virus isolates by restriction fragment length polymorphic analysis of polymerase chain reaction products amplified from multiple gene. *Avian Diseases*, 50 (1) 2006, 28-34.
22. Mardani, K., G. F. Browning, J. Ignatovic, and A. H. Noormohammadi. Rapid differentiation of current infectious bronchitis virus vaccine strains and field isolates in Australia. *Australian Veterinary Journal*. 83 (12) 2006, 55-58.
23. Mardani, K., A. H. Noormohammadi, J. Ignatovic, and G. F. Browning. Typing Infectious Bronchitis virus strains using reverse transcriptase polymerase chain reaction and restriction fragment length polymorphism analysis to compare the 3' 7.5 kb of their genomes. *Avian Pathology*, 35 (1) 2006, 63-69.
24. Jeffery, N., G. F. Browning, and A. H. Noormohammadi. Organisation of the *Mycoplasma synoviae* WVU-1853T *vlhA* gene locus. *Avian Pathology*, 35 (1) 2006, 53-57.
25. Allen, J., A.H. Noormohammadi, and G.F. Browning. The *vlhA* loci of *Mycoplasma synoviae* are confined to a restricted region of the genome. *Microbiology*, 151 (3) 2005, 935-940.
26. Noormohammadi, A.H., J. F. Jones, K. E. Harrigan and K. G. Whithear. Evaluation of non-temperature-sensitive clonal isolates from flocks vaccinated with live mutant *Mycoplasma synoviae* vaccine strain MS-H. *Avian Diseases*, 47 (2) 2003, 355-360.
27. Noormohammadi, A.H., G. F. Browning, J. Jones and K. G. Whithear. Improved detection of antibodies to *Mycoplasma synoviae* vaccine strain MS-H using an autologous recombinant MSPB. *Avian Pathology*, 31 (6) 2002, 611-617.
28. Noormohammadi, A.H., G. F. Browning, K. G. Whithear, D. O'Rourke, P. Cowling and P. F. Markham. Detection of antibodies to *Mycoplasma gallisepticum* vaccine strain ts-11 using the autologous pMGA ELISA. *Avian Diseases*, 46 (2) 2002, 405-411.
29. Noormohammadi, A.H., J. F. Jones, G. Underwood and K. G. Whithear. Poor systemic antibody response after vaccination of commercial broiler breeders with *Mycoplasma gallisepticum* vaccine ts-11 not associated with susceptibility to challenge. *Avian Diseases*, 46 (3) 2002, 623-628.

30. Noormohammadi, A.H., H. Hochrein, J. M. Curtis, T. M. Baldwin, and E. Handman. Paradoxical effects of IL-12 in leishmaniasis in the presence and absence of vaccinating antigen, *Vaccine*, 19 (28-29) 2001, 4043-4052.
31. Noormohammadi, A.H., Markham, P.F., Kanci, A., Whithear, K.G., and G. F. Browning. A novel mechanism for control of antigenic variation in the hemagglutinin gene family of *Mycoplasma synoviae*. *Molecular Microbiology*, 35 (4) 2000, 911-923.
32. Handman, E., A. H. Noormohammadi, J. M. Curtis, T. M. Baldwin and A. Sjolander. Therapy of murine cutaneous leishmaniasis by DNA vaccination, *Vaccine* 18 (26) 2000, 3011-3017.
33. Noormohammadi, A.H., P.F. Markham, J.F. Markham, K.G. Whithear, and G.F. Browning. *Mycoplasma synoviae* surface protein MSPB as a recombinant antigen in an indirect enzyme-linked immunosorbent assay. *Microbiology*, 145 (8) 1999, 2087-2094.
34. Duffy, M.F., I.D. Walker, K.G. Whithear, A. H. Noormohammadi, P.F. Markham, M. Catton, J. Leydon and G.F. Browning.. Indirect ELISA for the detection of IgG reactive with a recombinant protein expressed from the gene encoding the 116-kDa protein of *Mycoplasma pneumoniae*, *J. Clin. Microbiol.*, 37 (4) 1999, 1024-1029.
35. Noormohammadi, A.H., P.F. Markham, K.G. Whithear, M.F. Duffy, and G.F. Browning. Multigene families encoding the major hemagglutinins in phylogenetically distinct mycoplasmas. *Infection & Immunity*, 66 (7) 1998, 3470-3475.
36. Noormohammadi, A.H., P.F. Markham, K.G. Whithear, I.D. Walker, D.H. Ley, and G.F. Browning.. *Mycoplasma synoviae* has two distinct phase-variable major membrane antigens, one of which is a putative hemagglutinin. *Infection & Immunity*, 65 (7) 1997, 2542-2547.

#### **Books or book chapters:**

1. Hemmatzadeh, F. and A. H. Noormohammadi, Practical guide for DNA, Tehran University Press (2007)
2. Markham, P.F. and A.H. Noormohammadi. Diagnosis of mycoplasmosis in animals, p. *In* A. Blanchard and G. Browning (ed.), *Mycoplasmas: Molecular Biology, Pathogenicity and Strategies for Control*. Horizon Bioscience, (2005).
3. Duffy, M.F., A.H. Noormohammadi, N. Baseggio, G.F. Browning, and P.F. Markham. Immunological and biochemical characterisation of membrane proteins, p. *In* R. J. Miles and R. Nicholas (ed.), *Molecular Biological Methods for Mycoplasmas*. Humana Press, (1998).
4. Duffy, M.F., A.H. Noormohammadi, N. Baseggio, G.F. Browning, and P.F. Markham. Polyacrylamide gel electrophoresis of whole cell proteins, p. *In* R. J. Miles and R. Nicholas (ed.), *Molecular Biological Methods for Mycoplasmas*, Humana Press, (1998).