

**Professor DING Jeak Ling****Contact Information:****Department of Biological Sciences****National University of Singapore****14 Science Drive 4****Singapore 117543****Tel: 65162776 Fax:67792486 email: dbsdjl@nus.edu.sg****MAJOR RESEARCH INTERESTS: Innate immunity in “host-pathogen interaction”**

Our research focuses on frontline immune defense during acute infection /inflammation. Our research projects include:

- Control and regulation of innate immune responses (protein:protein and protein:ligand interactions). Functional proteomics of pathogen-responsive host receptors & effectors eg.
 - (a) respiratory proteins in frontline defense - structural /activity changes when bacterial invader interacts with the protein;
 - (b) functional significance of CRP-ficolin interaction in acute infection and inflammation.
- Defining pathogen-induced innate immune signaling (regulation of NFκB-responsive genes via TLR, SARM, thioredoxin).
- Development of endotoxin-antagonists (oligoaptamers and peptides).

RECENT REPRESENTATIVE PUBLICATIONS :

1. Wang XW, Tan BZ, Sun M, Ho B & **Ding JL**, Thioredoxin-like 6 protects retinal cell line from photooxidative damage by upregulating NFκB activity. *Free Radical Biol. Med.* in press (2008).
2. Le Saux A, Ng PML, Koh JJY, Low DHP, Leong GEL, Ho B & **Ding JL**, The macromolecular assembly of pathogen recognition receptors is impelled by serine proteases, via their complement control proteins (CCP) modules. *J. Mol. Biol.* 377 (2008): 902-913.
3. Loh WCB, Wang XW, Ho B & **Ding JL**, SARM: a novel TLR-like receptor adaptor, is functionally conserved from arthropod to human. *Mol. Immunol.* 45 (2008): 1732-1742.
4. Jiang N, Tan NS, Ho B & **Ding JL**, Respiratory proteins generate ROS as an antimicrobial strategy. *Nature Immunol.* 8 (2007): 1114-1122.
5. Li Y, Ng PML, Ho B & **Ding JL**, CrOctin is a female-specific pentraxin that binds microbial phosphoethanolamine and bridges PRRs to the invading bacteria. *Eur. J. Immunol.* 37 (2007): 3477-3488.
6. Ng PML, Le Saux A, Lee CM, Tan NS, Lu JH, Thiel S, Ho B & **Ding JL**, C-reactive protein collaborates with plasma lectins to boost immune response against bacteria. *EMBO J* 26 (2007): 3431-3440.
7. Wang XW, Tan NS, Ho B & **Ding JL**, Evidence for the ancient origin of the NFκB/IκB cascade – its archaic role in infection and immunity. *Proc. Natl. Acad. Sci, USA* 103 (2006): 4204-4209.
8. Zhu Y, Thangamani S, Ho B & **Ding JL**, The ancient origin of the complement system. *EMBO J.* 24 (2005): 382-394.
9. **Ding J L**, Tan KC, Thangamani S, Kusuma N, Seow WK, Bui THH, Wang J & Ho B, Spatial and temporal co-ordination of expression of immune response during *Pseudomonas* infection of horseshoe crab. *Genes & Immunity* 6 (2005): 557-574.
10. Li P, Wohland T, Ho B & **Ding JL**, Perturbation of LPS micelles by Sushi3 antimicrobial peptide : the importance of intermolecular disulfide-bond in S3 dimer for binding, disruption and neutralisation of LPS. *J. Biol. Chem.* 279 (2004): 50150-50156.
11. **Ding JL** & Ho B, New era in pyrogen testing. *Trends in Biotechnology*, 19 (2001): 277-281
12. Yau YH, Ho B, Tan N S, Ng P M L & **Ding JL**, The high therapeutic index of Factor C sushi peptides: potent antimicrobials against *Pseudomonas aeruginosa*. *Antimicrobial Agents Chemotherapy*, 45 (2001): 2820-2825
13. Tan NS, Ho B & **Ding JL** (2000) High affinity LPS-binding domain(s) in recombinant Factor C of a horseshoe crab neutralizes LPS-induced lethality. *FASEB J* 14: 859-870.
14. Tan NS, Ho B & **Ding JL** (2000) Definition of endotoxin-binding sites in horseshoe crab Factor C recombinant sushi proteins and neutralisation of endotoxin by sushi peptides. *FASEB J* 14: 1801-1813.

PATENTS:

1. Ding JL and Ho B (1998, 1999, 2001, 2002) – Cloning and expression of horseshoe crab Factor C for detection, removal of endotoxin & endotoxin therapeutics (US Patents granted).
2. Ding JL, Tan NS, Ho B and Lam TJ (1998) – Isolated nucleic acids encoding a secretory signal for expression and secretion of heterologous recombinant proteins (US Patent granted).

AWARDS & RESEARCH HIGHLIGHTS:

- 1995: National Science & Technology Award, Singapore (“Outstanding Contribution to Genetic Engineering”).
2000: Far Eastern Economic Review (FEER) Innovations Award.
2001: National University of Singapore “Outstanding Researcher Award”.
2005-: Published impactful research findings on Innate Immunity, in *EMBO J*, *PNAS* and *Nature Immunology*