

## Principal Investigator

### Name: HEW Choy Leong

Appt: Professor and Head of Department of Biological Sciences; Program Leader (Structural Biology Group), Office of Life Sciences, National University of Singapore

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### Employment History

1999-Present Head, Dept of Biological Sciences, NUS  
2001-2003 Deputy Director, Office of Life Sciences, NUS  
1984-2001 Professor, Cross-Appointed, Dept of Biochemistry, Univ of Toronto  
1983-1999 Senior Staff Scientist, Div. of Structural Biol. & Biochemistry, the Hospital for Sick Children, Toronto  
1982-1983 Professor, Dept of Biochemistry, Memorial Univ of Newfoundland (MUN)  
1979 Associate Professor, Dept of Molecular Biology, MUN  
1977-1982 Associate Professor, Department of Biochemistry, MUN  
1974-1976 Assistant Professor, Department of Biochemistry, MUN

### Research Interest:

Biology and Biotechnology of Antifreeze Proteins

Transgenic Fish

Molecular Endocrinology

Marine viral pathogens

Proteomics

### Academic Qualifications:

1963 B.Sc. Nanyang University, Singapore

1966 M.Sc. Simon Fraser University, Canada

1970 P. HD. University of British Columbia

### Publications: (up to recent 8)

1. Fletcher G, Choy L Hew and Peter L Davies (2001) Antifreeze proteins in teleost fishes. *Ann. Rev. Physiology* 63: 359-90.
2. Miao M, Chan SL, Fletcher GL and Hew CL (2001) The rat ortholog of the presumptive flounder antifreeze enhancer-binding protein is a helicase domain-containing protein. *Eur. J. Biochem.* 267: 7237-7246.
3. Low WK, Lin Q, Stathakis C, Miao M, Fletcher GL and Hew CL (2001) Isolation and characterization of skin-type, type I antifreeze polypeptides from the longhorn sculpin, *M. octodecemspinosus*. *J. Biol. Chem.* 276(15): 11582-11589.
4. Zhang X, Huang C, Xun X and Hew CL (2002) The transcription and identification of an envelope protein gene (p22) from shrimp white spot syndrome virus. *J. Gen. Virology* (83): 471-477.
5. Low WK, Lin Q and Hew CL (2002) The role of N- and C-termini in the antifreeze activity of winter flounder (*P. americanus*) antifreeze proteins. *J. Biological Chemistry*, 278(12):10334-343.

6. Huang C, Zhang X, Lin Q, Xu X, Hu Z and Hew CL (2003) Proteomic analysis of shrimp white spot syndrome viral proteins and characterization of a novel envelope protein VP466. *Mol.Cell.Proteomics*, 1: 223-231.
7. Chew FT, Ong SU and Hew CL (2003) SARS coronavirus, viral mimicry, antibody-dependent enhancement of infection, autoimmunity and vaccine. *Lancet* 361: 2081.
8. Du N, Liu XY, and Hew CL (2003) Ice nucleation inhibition: mechanism of antifreeze by antifreeze protein. *J.Biol.Chem.* 278(38): 36000-36004.
9. Li Z, Lin Q, Yang DSC, Ewart KV and Hew CL (2004) The role of Ca<sup>2+</sup>-coordinating residues of herring antifreeze-protein in antifreeze activity. *Biochem.J.* 43(46):14547-14554.
10. Song WJ, Qin QW, Qiu J, Huang CH, Wang F, Joshi S and Hew CL (2004) Functional genomics analysis of Singapore grouper iridovirus (SGIV): complete sequence determination and proteomic analysis. *J.Virology*, 78: 12576-12590.

**Recent Awards:**

- 1980 APICS-Fraser Award, Most Outstanding Young Scientist in Atlantic Provinces of Canada
- 1992 Outstanding Achievement Award, Chinese Community Centre of Ontario Incorporated
- 1993 Achievement Award, Chinese Canadian Institute of Arts & Science, Toronto, Canada
- 1993 Merit Award, Education Foundation, Federation of Chinese Canadian Professionals, Ontario, Canada

**Declaration of other Funding Support:**

1. NUS Academic Research Fund: Functional genomics studies of Singapore grouper iridovirus. \$75,000, 2 yrs, end 31 Jan 2006
2. NUS & MOE Research Fund: Proteomic investigation of colorectal cancer. \$547,350, 2.5 yrs, end 31 Dec 2005
3. SCS Research Fund: Oncoproteomics in biomarker and drug discovery. \$345,000, 1 yr, end 31 Mar 2006
4. NUS ARC & MOE: Structural genomics of shrimp white spot syndrome virus. \$695,520, 3 yrs, end 31 Aug 2007