

The program provides scientific and technical advice on key issues associated with the economically and environmentally sustainable development of shellfish aquaculture. The program is committed to developing and evaluating new and existing techniques to enhance the competitive advantage of aquaculture industries in an international market-place, and minimising the risks that new and existing aquaculturists may encounter.

### Overview

The aquaculture shellfish and genetics program has mainly dealt with oyster and abalone but also mussels and scallops. Areas of expertise include genetic improvement, polyploidy, artificial feed development, hatchery, nursery, microalgal and farming systems. This program has established strong link with local and international research organisations.

### Research Projects

2008/704 Australian Seafood CRC: Review of available tools that can be used to support selective breeding programs.

2008/722 Australian Seafood CRC: Scope and economic analysis of options for a nationally unified breeding program that provides significant economic benefits to the Australian abalone aquaculture industry.

2001/254 FRDC: Selective breeding of farmed abalone to enhance growth rates II.

2003/208 FRDC: Reduction in Pacific oyster mortality by improving farming and processing technologies in South Australia.

2002/204 FRDC: Development of techniques for production of homozygous Pacific oysters.

2000/202 FRDC: Development of spermatozoa cryopreservation techniques in farmed abalone.

### Recent Publications

Li, Y., Li, X. and Qin, J., 2007. Triploidy induction in Australian greenlip abalone *Haliotis laevis* (Donovan) with cytochalasin B. *Aquaculture Research* 38: 487-492.

Li, Y., Qin, J.G., Abbot, C.A., Li, X. and Benkendorff, K., 2007. Synergistic impacts of heat shock and spawning on the physiology and immune health of *Crassostrea gigas*: An explanation for summer mortality in Pacific oysters. *Am J Physiol-Reg I* 293, 2353-2362.

Liu, B. and Li, X., 2008. Preliminary studies on cryopreservation of Sydney rock oyster (*Saccostrea glomerata*) embryos and larvae. *Journal of Shellfish Research* (in print)

Song, L., Li, X., Bott, K., Wang, T., Clarke, S. and Zhao, W. 2007. Effects of air exposure on the lysosomal membrane stability of hemocytes in blacklip abalone, *Haliotis rubra* (Leach). *Aquaculture Research* 38, 239-245.



### Staff

**Dr Xiaoxu Li**

**Subprogram Leader**

Dr Li received a PhD from the Institute of Oceanology, the Chinese Academy of Sciences. He has extensive knowledge and experience in marine invertebrate genetics and aquaculture developed over 20 years working as a research scientist both in Australia and China. His research has primarily focused on selective breeding, chromosome set manipulation, spermatozoa and embryo cryopreservation, molluscan reproduction, physiology, ecology and histology.

**Mr Mark Gluis**

**Senior Research Officer**

Mr Gluis has a range of skills and experience developed over 15 years working in commercial mollusc hatcheries, nurseries and grow-out farms both in Australia and the U.S. Mr Gluis has worked as a project manager, establishing three commercial oyster hatcheries with companies in Australia and the U.S., as well as the shellfish research hatchery at the South Australian Research and Development Institute (SARDI). Mr Gluis has a thorough knowledge of shellfish aquaculture practices in Australia and a commitment to their sustainable development.

### Contact

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