

Sujin Bao, Ph.D.

Department of Molecular Biology and Pharmacology
Washington University School of Medicine
Campus Box 8103, 660 South Euclid Ave
St. Louis, MO 63110

Tel: (314) 747-3998
Fax: (314) 362-7058
E-mail: sbao@wustl.edu

Current Research

I am examining how cell-cell adhesion regulates morphogenesis and patterning during development. Specifically, I am trying to address how cell-cell adhesion regulates assembly of adherens junctions. I am also exploring how the cell adhesion molecules Hibris and Roughest are transcriptionally regulated. Finally, I am examining how unneeded cells are removed by programmed cell death and the role of cell competition in this process.

Education

- 1992-1996: Ph.D. in Molecular Biophysics, Institute of Biophysics
Chinese Academy of Sciences, Beijing 100101, China
Ph.D. dissertation: Determination of crystal structure of desheptapeptide(B24-B30)
insulin and crystallographic studies on chicken liver fructose-2,6-bisphosphatase.
Advisor: Dr. Liang Dongcai
- 1989-1992: M.Sc. in Thermophysics Engineering, Tsinghua University
Beijing 100084, China
M. Sc. thesis: A Physico-mathematical model for heat and mass transfer in unsaturated
wet porous media with infiltration.
Advisor: Dr. Wang Buxuan
- 1985-1989: B.Sc. in Power Engineering, Dalian University of Technology
Dalian 116024, China

Honors

- Honarium of Post-doctoral Symposium, Washington University, 2004
President Fellowship, Institute of Biophysics, Chinese Academy of Sciences, 1996
Jiang Nanxiang Fellowship, Tsinghua University, 1991 (top 1%)
Guanghua Fellowship, Tsinghua University, 1990 (top 5%)
Outstanding student of Dalian City, Liaoning Province, 1987 (top 1%)
First-class scholarship, Dalian University of Technology 1986, 1987 and 1988 (top 1%)

Grant Received

- Natural Science Foundation of China: Structural and functional analysis of glial cell line
derived neurotrophic factor, September 1, 1997

Research Experience

- 2001-2005 Post-doctoral fellow, Department of Molecular Biology and Pharmacology, Washington
University, St. Louis, MO 63110
Post-doctoral advisor: Dr. Ross Cagan

Established the essential role of cell adhesion molecules Hibiris and Roughest during morphogenesis in the *Drosophila* eye; established preferential adhesion as a mechanism to create a precise hexagonal pattern; examined the role of *Notch* in morphogenesis and the mechanism by which *Notch* regulates morphogenesis; established the essential role of *wingless* in the cell death in the early pupal eye; explored the mechanism by which cell competition determines survival/death cell fate decision in the mid-pupal eye.

1999-2001 Visiting scientist, Division of Molecular Embryology, German Cancer Research Center (DKFZ), INF 280, Heidelberg 69120, Germany.

Host Professor: Dr. Christof Niehrs

Established expression systems for production of biologically active secreted protein Dickkopf-1 in large scale in yeast *Pichia pastoris* and *E. coli*; established the assay for Dickkopf-1 in inhibiting Wnt signaling

1997-1999 Associate Professor in Molecular Biophysics, Institute of Biophysics Chinese Academy of Sciences, Beijing 100101, China

Established expression system for human glial cell line derived neurotrophic factor (GDNF); crystallized human GDNF

1996-1997 Assistant Professor in Molecular Biophysics, Institute of Biophysics Chinese Academy of Sciences, Beijing 100101, China

Refined the structure of desheptapeptide(B24-B30) insulin (form A) at 1.6Å resolution; Determined the structure of desheptapeptide(B24-B30) insulin in a new crystal form

Teaching Experience

2005 Mentor for PhD student rotation projects, Department of Molecular Biology and Pharmacology, Washington University, St. Louis, MO 63110

1998 Eight-class lectures on Principles of Protein Crystallography, Department of Biological Science and Biotechnology, Tsinghua University, Beijing 10084, China

1990 Teaching Assistant for Thermodynamics, Department of Thermal Engineering, Tsinghua University, Beijing 100084, China

1989-1990 Teaching Assistant for Principles of Heat and Mass Transfer, Department of Thermal Engineering, Tsinghua University, Beijing 100084, China

Community Involvement

1997-1999 Deputy director of the National Laboratory of Biomacromolecules, Institute of Biophysics, Chinese Academy of Sciences, Beijing 100101, China

Established a computation facility for structural biology including O2 workstations (SGI, USA); established purification system (including HPLC and FPLC systems); set up 340mm Image Plate Detector System (Marresearch, Germany) for X-ray crystallography; organized annual conferences of the National Laboratory of Biomacromolecules.

1997-1999 Member, Academic Committee of the Institute of Biophysics, Chinese Academy of Sciences, Beijing 100101, China

Selected junior faculty members; reviewed grant proposals

Manuscript

1. Sujin Bao and Ross Cagan (2005). *Notch* regulates cell adhesion in the Drosophila eye. Manuscript in preparation.

Publications

1. Sujin Bao and Ross Cagan (2005). Preferential Adhesion mediated by Hibris and Roughest Regulates Morphogenesis and Patterning in the Drosophila Eye. *Dev. Cell* **8**, 925-935.
2. Julia Cordero, Omar Jassim, Sujin Bao & Ross Cagan (2004). A role for wingless in an early pupal cell death event that contributes to patterning the Drosophila eye. *Mech Dev.* **121**, 1523-30.
3. Sujin Bao and Ross Cagan(2003). Cell death in Drosophila. In *Essentials of apoptosis: A Guide for Basic and Clinical Research* (eds. Yin, X.M. and Dong. Z.), pp145-161, Humana Press Inc., Totowa, NJ.
4. Bao Sujin, Zhang Jiping, Chang Wenrui & Liang Dongcai (1999). Structure of desheptapeptide(B24-B30) insulin in a new crystal form. *Science in China* **C42**, 267-273.
5. Bao Sujin, Deng Wei and Chen Yan (1998). Expression, purification and crystallization of human glial cell line derived neurotrophic factor. In *the Proceedings of 8th National Symposium on Biophysics*, p.128. Biophysical Society of China, Beijing.
6. Bao Sujin, Xie Dianlin, Zhang Jiping, Chang Wenrui & Liang Dongcai (1998). Structural analysis of desheptapeptide(B24-B30) insulin by molecular replacement. *Science in China* **C41**, 258-264.
7. Su-jin Bao, Dian-lin Xie, Ji-ping Zhang, Wen-rui Chang and Dong-cai Liang (1997). Crystal structure of desheptapeptide(B24-B30) insulin at 1.6Å resolution: implications for receptor binding. *Proc. Natl. Acad. Sci. USA* **94**, 2975-2980.
8. Bao Sujin, Wan Zhuli, Chang Wenrui, Gui lulu, Liang Dongcai etal. (1996). Preliminary crystallographic analysis of recombinant chicken liver fructose-2, 6-bisphosphatase. *Science in China* **B39**, 7-10.
9. Shu-ye Lei, Su-jin Bao and Bu-xuan Wang (1992). A model for heat and mass transfer in unsaturated wet porous media with infiltration. in *Transport Phenomena Science and Technology* (Wang, B.X., ed.), pp.639-644, Higher Education Press, Beijing.
10. Shu-ye Lei, Su-jin Bao, Wei-cheng Wang and Bu-xuan Wang (1992). Measurement of Porosity and Permeability of Unconsolidated Porous Media. *J. Eng. Thermoph.* **13**, 408-411.