

Shaodong Dai

Curriculum Vitae

Integrated Department of Immunology
National Jewish Medical and Research Center
& University of Colorado Health Sciences Center
1400 Jackson Street
Denver, CO 80206
Tel: (303) 398-1504, Fax: (303) 270-2166
E-mail: dais@njc.org

EDUCATION:

- Sep. 1993-Dec.1998 **Ph. D. in Molecular Biology (Protein Crystallography)**,
Department of Molecular Biology, Uppsala Biomedical Centre,
Uppsala, SWEDEN.
- Sep. 1988-Jul. 1992 **Bachelor of Engineering** in Biochemical Engineering, Beijing
University of Chemical Technology, Beijing, P.R.CHINA

PROFESSIONAL EXPERIENCE:

- 2008-present Assistant professor, Integrated Department of Immunology, **National Jewish Medical and Research Center**, 1400 Jackson St, Denver, CO 80206.
- 2001-2008 Instructor and crystallography facility manager, **Howard Hughes Medical Institute**, Integrated Department of Immunology, National Jewish Medical and Research Center, 1400 Jackson St, Denver, CO 80206.
- 1999- 2001 Postdoctoral Research Associate, Department of Biological Sciences, Lilly Hall of Life Sciences, **Purdue University**, West Lafayette, IN 47907.
- 1993- 1999 Research assistant, Department of Molecular Biology, **Uppsala Biomedical Centre**, Uppsala, SWEDEN

TEACHING EXPERIENCE:

- 1994-1997 Bio I course: An introduction to modern molecular biology
Subject taught: Gene cloning and plasmid purification
- 1997 Bke II course: Advanced biochemistry course for undergraduate student
Subject taught: Enzyme Kinetics, and Gene cloning and plasmid purification
- 1997-1998 Bke I course: Biochemistry course for undergraduate student
Subject taught: Gene cloning and plasmid purification
- 1999-2001 Training graduate students at Purdue University.
- 2001-present Training graduate students and postdocs on protein crystallography

HONORS AND AWARDS

1. Travel grant for young scientists in Swedish University of Agricultural Sciences, 1996
2. Chinese Academy of Sciences travel grant for overseas scholars, 1996
3. Travel award from Wallenberg's foundation, 1998
4. Travel grant from European Crystallography Meeting -18 Organizing Committee, 1998
5. Travel grant from Organizing Committee of the Summer School "Structure and Function of Metalloproteins", 1998
6. Congress award from American Crystallographic Association for ACA meeting, 2000
7. Travel Stipend from BioCARS Time Resolved Crystallography Workshop, 2001
8. Speaker, American Crystallographic Association meeting, 2006
9. Speaker, 13th International Congress of Immunology, 2007
10. Young Scientist Travel Grant, 13th International Congress of Immunology, 2007

REVIEWER ACTIVITIES

Section editor of protein structure in chemical sciences for *Amino acids*
Ad hoc reviewer for *Proceedings of the National Academy of Sciences*
Ad hoc reviewer for *Acta Crystallographica Section D*
Ad hoc reviewer for *Photosynthesis Research*
Ad hoc reviewer for *Mini-Reviews in Medicinal Chemistry*
Ad hoc reviewer for *The Plant Journal*

BIBLIOGRAPHY

Original papers

Crystal structure of HLA DP2: Implications for Chronic Beryllium Disease.

Shaodong Dai, Guinevere A. Murphy, Frances Crawford, Douglas G. Mack, Allison K. Martin, Philippa Marrack, John W. Kappler and Andrew P. Fontenot (In manuscript)

V β CDR3 modulates conserved TCR interactions with MHC.

Kira Rubtsova, James Scott-Browne, Frances Crawford, **Shaodong Dai**, Philippa Marrack and John Kappler (**PNAS** in press)

The structure of HLA-DR52c: comparison to other HLA-DRB3 Isotypes

Shaodong Dai, Frances Crawford, Philippa Marrack and John W. Kappler, **PNAS** (2008) 105(33):11893-7.

Crossreactive T Cells spotlight the germline rules for alphabeta T cell-receptor interactions with MHC molecules

Shaodong Dai, Eric Huseby, Kira Rubtsova, James Scott-Browne, Frances Crawford, Whitney MacDonald, Philippa Marrack, and John Kappler, **Immunity** (2008) 28(3):324-34

Structural snapshots along the reaction pathway of ferredoxin:thioredoxin reductase.

Shaodong Dai*, Rosmarie Friemann, Dominique A. Glauser, Florence Bourquin, Wanda Manieri, Peter Schürmann and Hans Eklund, **Nature** (2007), 448(7149):92-96

* **Corresponding author**

Structural basis of recognition between JMJD2 and histone tail.

Zhongzhou Chen, Jianye Zang, Fei Lin, Xia Hong, Qin Wang, **Shaodong Dai**, Kirk Hansen, Yang Shi and Gongyi Zhang, **PNAS** (2007) 104(26):10818-23

Elucidation of some Bax conformational changes through crystallization of an antibody-peptide complex

Fred W. Peyerl, **Shaodong Dai**, Guinevere A. Murphy, Frances Crawford, Janice White, Philippa Marrack and John W. Kappler, **Cell and Death Differentiation** (2007) 14 447-452

Bcl-xl does not have to bind Bax in order to protect T cells from death.

Xinqi Liu, Yanan Zhu, **Shaodong Dai**, Janice White, Fred Peyerl, Philippa Marrack and John W. Kappler, **Journal of Experimental Medicine** (2006) 203(13):2953-61

Kinetic and structural insight into the mechanism of BphD, a C-C bond hydrolase from the biphenyl degradation pathway

Geoff P. Horsman, Jiyuan Ke, **Shaodong Dai**, Stephen Y. K. Seah, Jeffrey T. Bolin, and Lindsay D. Eltis, **Biochemistry** (2006) 45(37):11071-86.

Structural insights into histone demethylation by JMJD2 family members.

Zhongzhou Chen, Jianye Zang, Johnathan Whetstine, Xia Hong, Foteini Davrazou, Tatiana G. Kutateladze, Michael Simpson, Qilong Mao, Cheol-Ho Pan, **Shaodong Dai**, James Hagman, Kirk Hansen, Yang Shi and Gongyi Zhang, **Cell** (2006) 125(4):691-702.

The structure of a Bcl-xL/Bim fragment complex: Implications for Bim function.

Xinqi Liu, **Shaodong Dai**, Yanan Zhu, Philippa Marrack, and John Kappler, **Immunity** (2003) 19, 341-52.

N-terminal truncation of the variable subunit stabilizes spinach ferredoxin:thioredoxin reductase.

Franchini, L., Raeber, L., **Dai, S.**, Manieri, W., Stritt-Etter, A.-L., and Schürmann P. **FEBS letters** (2003), 549, 167-70.

Crystal structure of the SarS protein from Staphylococcus aureus.

Ronggui Li, Adhar C. Manna, **Shaodong Dai**, Ambrose L. Cheung and Gongyi Zhang. **Journal of Bacteriology** (2003) 185, 4219-25.

Crystal structures of sTALL-1 with its cognate receptors reveal a novel ligand-receptor recognition mode of TNF family.

Yingfang Liu, Xia Hong, John Kappler, Ling Jiang, Rongguang Zhang, Liangguo Xu, Cheol-Ho Pan, Hong-Bing Shu, **Shaodong Dai**, and Gongyi Zhang. **Nature** (2003) 423, 49-56.

Identification and analysis of a bottleneck in PCB biodegradation.

Shaodong Dai, Frédéric H. Vaillancourt, Halim Maaroufi, Nathalie M. Drouin, David B. Neau, Victor Snieckus, Jeffrey T. Bolin & Lindsay D. Eltis, **Nature Structural Biology** (2002) 9, 934-9

Alternate interactions define the binding of peptides to the MHC molecule IA^b.

Xinqi Liu, **Shaodong Dai**, Frances Crawford, Rachel Frugé, Philippa Marrack, and John Kappler, **Proc Natl Acad Sci U S A.** (2002) 99, 8820-8825.

Structural Basis of Cytochrome c Presentation by IE^k.

Daved H. Fremont, **Shaodong Dai**, Herbert Chiang, Frances Crawford, Philippa Marrack and John Kappler, **Journal of Experimental Medicine** (2002) 195,1043-1052

Redox signaling in chloroplasts: cleavage of disulfides by an iron-sulfur cluster.

Shaodong Dai, Cristina Schwendtmayer, Peter Schürmann, Ramaswamy S. and Hans Eklund, **Science** (2000) 287, 655-658

Crystal structure of Arabidopsis thaliana NADPH dependent thioredoxin reductase at 2.5 Å resolution.

Shaodong Dai, Markku Saarinen, S. Ramaswamy, Yves Meyer, Jean-Pierre Jacquot and Hans Eklund. **Journal of Molecular Biology** (1996) 264, 1044-1057

Reviews and book chapters

Evolutionarily conserved amino acids in TCR V regions and MHC control their interaction

Philippa Marrack, James P. Scott-Browne, **Shaodong Dai**, Laurent Gapin, and John Kappler, **Annual Review of Immunology** (2008), Vol. 26:171-203

Light/dark regulation of chloroplast metabolism.

Shaodong Dai, Kenth Johansson, Peter Schürmann and Hans Eklund, **the Structure and Function of Plastids**, Kluwer Academic Publishers (2006)

Structural basis of redox signaling in photosynthesis: structure and function of FTR and target enzymes.

Shaodong Dai, Kenth Johansson, Myroslawa Miginiac-Maslow, Peter Schürmann, and Hans Eklund, **Photosynthesis Research**, (2004) 79 233-248

How does light regulate chloroplast enzymes? Structure-function studies of the ferredoxin/thioredoxin system.

Shaodong Dai, Cristina Schwendtmayer, Kenth Johansson, Peter Schürmann, Ramaswamy S. and Hans Eklund, **Quarterly Review of Biophysics**, (2000) 33, 67-108

Structure and function of ferredoxin:thioredoxin reductase.

Schürmann P., Cristina Schwendtmayer C., **Shaodong Dai**, Ramaswamy S., Eklund, **Sulfur Nutrition and Sulfur Assimilation in Higher Plants**, Edited by C. Brunold et al., Bern, Switzerland (2000), 231-232

A 3-D model for the Mycobacterium leprae thioredoxin/thioredoxin reductase hybrid protein. Brigitte Weiles, **Shaodong Dai**, Matti Nikkola, and Hans Eklund in **Thioredoxin and Thioredoxin Reductase of Pathogenic Mycobacteria**. Brigitte Weiles, University of Leiden, the Netherlands 65-77 (1996)