

## David B. McKay

Professor of Structural Biology, Emeritus

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#### ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Structural Biology
- Member, Bio-X

#### HONORS AND AWARDS

- Fellow, American Association for the Advancement of Science (2001)

#### PROFESSIONAL EDUCATION

- B.S., California Institute of Technology , Physics
- Ph.D., University of Chicago , Biophysics

#### LINKS

- McKay Lab Website: <http://mckaylab.stanford.edu>

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

See:

<http://alpha1.stanford.edu/~mckaylab>

### Publications

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#### PUBLICATIONS

- **Structure and Function of Steroid Receptor RNA Activator Protein, the Proposed Partner of SRA Noncoding RNA** *JOURNAL OF MOLECULAR BIOLOGY*  
McKay, D. B., Xi, L., Barthel, K. K., Cech, T. R.  
2014; 426 (8): 1766-1785
- **Structure of the RNA Binding Domain of a DEAD-Box Helicase Bound to Its Ribosomal RNA Target Reveals a Novel Mode of Recognition by an RNA Recognition Motif** *JOURNAL OF MOLECULAR BIOLOGY*  
Hardin, J. W., Hu, Y. X., McKay, D. B.  
2010; 402 (2): 412-427
- **The Bacillus subtilis RNA helicase YxiN is distended in solution.** *Biophysical journal*  
wang, s., Overgaard, M. T., Hu, Y., McKay, D. B.  
2008; 94 (1): L01-3
- **The periplasmic bacterial molecular chaperone SurA adapts its structure to bind peptides in different conformations to assert a sequence preference for aromatic residues** *JOURNAL OF MOLECULAR BIOLOGY*  
Xu, X., wang, s., Hu, Y., McKay, D. B.  
2007; 373 (2): 367-381

- **Structure of the second domain of the *Bacillus subtilis* DEAD-box RNA helicase YxiN** *ACTA CRYSTALLOGRAPHICA SECTION F-STRUCTURAL BIOLOGY AND CRYSTALLIZATION COMMUNICATIONS*  
Caruthers, J. M., Hu, Y., McKay, D. B.  
2006; 62: 1191-1195
- **Retention of core catalytic functions by a conserved minimal ribonuclease E peptide that lacks the domain required for tetramer formation** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
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wang, s., Hu, Y., Overgaard, M. T., Karginov, F. V., Uhlenbeck, O. C., McKay, D. B.  
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- **Structure of the *Escherichia coli* FlhDC complex, a prokaryotic heteromeric regulator of transcription** *JOURNAL OF MOLECULAR BIOLOGY*  
Wang, S. Y., Fleming, R. T., Westbrook, E. M., Matsumura, P., McKay, D. B.  
2006; 355 (4): 798-808
- **YxiN is a modular protein combining a DEx(D)/(H) core and a specific RNA-binding domain** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Karginov, F. V., Caruthers, J. M., Hu, Y. X., McKay, D. B., Uhlenbeck, O. C.  
2005; 280 (42): 35499-35505
- **Binding of phage-display-selected peptides to the periplasmic chaperone protein SurA mimics binding of unfolded outer membrane proteins** *FEBS LETTERS*  
Bitto, E., McKay, D. B.  
2004; 568 (1-3): 94-98
- **Kinetics of protein substrate degradation by HslUV** *5th International Conference on AAA(plus) Proteins*  
Kwon, A. R., Trame, C. B., McKay, D. B.  
ACADEMIC PRESS INC ELSEVIER SCIENCE.2004: 141-47
- **The periplasmic molecular chaperone protein SurA binds a peptide motif that is characteristic of integral outer membrane proteins** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Bitto, E., McKay, D. B.  
2003; 278 (49): 49316-49322
- **Crystal structure of the leadzyme at 1.8 angstrom resolution: Metal ion binding and the implications for catalytic mechanism and allo site ion regulation** *BIOCHEMISTRY*  
Wedekind, J. E., McKay, D. B.  
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- **Structure of the *Yersinia enterocolitica* molecular-chaperone protein SycE** *ACTA CRYSTALLOGRAPHICA SECTION D-BIOLOGICAL CRYSTALLOGRAPHY*  
Trame, C. B., McKay, D. B.  
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- **Crystal structure of HslUV complexed with a vinyl sulfone inhibitor: Corroboration of a proposed mechanism of allosteric activation of HslV by HslU** *JOURNAL OF MOLECULAR BIOLOGY*  
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Caruthers, J. M., McKay, D. B.  
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- **Refined crystallographic structure of *Pseudomonas aeruginosa* exotoxin A and its implications for the molecular mechanism of toxicity** *JOURNAL OF MOLECULAR BIOLOGY*  
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- **Structure of the universal stress protein of *Haemophilus influenzae*** *STRUCTURE*  
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- **Structure of *Haemophilus influenzae* HslU protein in crystals with one-dimensional disorder twinning** *ACTA CRYSTALLOGRAPHICA SECTION D-BIOLOGICAL CRYSTALLOGRAPHY*  
Trame, C. B., McKay, D. B.  
2001; 57: 1079-1090
- **Crystal structure of yeast initiation factor 4A, a DEAD-box RNA helicase** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
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- **Crystal and solution structures of an HslUV protease-chaperone complex** *CELL*  
Sousa, M. C., Trame, C. B., Tsuruta, H., Wilbanks, S. M., Reddy, V. S., McKay, D. B.  
2000; 103 (4): 633-643
- **Purification, crystallization, and X-ray diffraction analysis of small ribozymes** *RNA-LIGAND INTERACTIONS PT A*  
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2000; 317: 149-168
- **Crystallographic structure of the amino terminal domain of yeast initiation factor 4A, a representative DEAD-box RNA helicase** *RNA-A PUBLICATION OF THE RNA SOCIETY*  
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- **The metzincin-superfamily of zinc-peptidases** *10th International Conference on Intracellular Protein Catabolism*  
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- **KINETICS OF NUCLEOTIDE-INDUCED CHANGES IN THE TRYPTOPHAN FLUORESCENCE OF THE MOLECULAR CHAPERONE HSC70 AND ITS SUBFRAGMENTS SUGGEST THE ATP-INDUCED CONFORMATIONAL CHANGE FOLLOWS INITIAL ATP BINDING** *BIOCHEMISTRY*  
Ha, J. H., McKay, D. B.  
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- **THE METZINCINS - TOPOLOGICAL AND SEQUENTIAL RELATIONS BETWEEN THE ASTACINS, ADAMALYSINS, SERRALYSINS, AND MATRIXINS (COLLAGENASES) DEFINE A SUPERFAMILY OF ZINC-PEPTIDASES** *PROTEIN SCIENCE*  
STOCKER, W., Grams, F., Baumann, U., Reinemer, P., GOMISRUTH, F. X., McKay, D. B., Bode, W.  
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- **HOW POTASSIUM AFFECTS THE ACTIVITY OF THE MOLECULAR CHAPERONE HSC70 .2. POTASSIUM BINDS SPECIFICALLY IN THE ATPASE ACTIVE-SITE** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
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- **ATPASE KINETICS OF RECOMBINANT BOVINE 70 KDA HEAT-SHOCK COGNATE PROTEIN AND ITS AMINO-TERMINAL ATPASE DOMAIN** *BIOCHEMISTRY*  
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- **STRUCTURAL BASIS OF THE 70-KILODALTON HEAT-SHOCK COGNATE PROTEIN ATP HYDROLYTIC ACTIVITY .1. KINETIC ANALYSES OF ACTIVE-SITE MUTANTS** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
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- **DEFINITION AND SPATIAL LOCATION OF MOUSE INTERLEUKIN-2 RESIDUES THAT INTERACT WITH ITS HETEROTRIMERIC RECEPTOR** *EMBO JOURNAL*  
Zurawski, S. M., Vega, F., Doyle, E. L., Huyghe, B., Flaherty, K., McKay, D. B., Zurawski, G.  
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- **3-DIMENSIONAL STRUCTURE OF RECOVERIN, A CALCIUM SENSOR IN VISION** *CELL*  
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OBRIEN, M. C., McKay, D. B.  
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- **STRUCTURE OF EXOTOXIN-A OF PSEUDOMONAS-AERUGINOSA AT 3.0-Å RESOLUTION** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
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