

QIHONG HUANG

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EDUCATION

2000 Ph.D. in Microbiology, University of California, Davis.
Advisor: Professor Bruce D. Hammock.

1993 Bachelor of Medicine in Clinical Medicine, Shanghai Medical University.

EMPLOYMENT HISTORY

2001 to present Postdoctoral Fellow, The Scripps Research Institute.
Advisor: Professor Peter G. Schultz.

1993-1995 Assistant Researcher, Shanghai Institute of Biochemistry, Chinese Academy of Sciences.

GRANTS AND AWARDS

2001-present The Scripps Research Institute, Skaggs Fellowship.

2001 University of California-Davis, John E. Kinsella Award.

2000 University of California-Davis, Jastro Shields Research Grant, Analysis of Gene Expression in Baculovirus AcMNPV by High-throughput DNA Microarray Hybridization, \$2,900.

1998-2000 NIEHS/UC Davis Superfund Fellowship.

2000 University of California-Davis, Summer Research Fellowship.

2000 NIEHS/EPA Superfund Basic Research Program Travel Award.

1999 American Society for Virology Travel Award.

1988, 1991-1992 Shanghai Medical University Fellowship.

RESEARCH EXPERIENCE

2001-present The Scripps Research Institute.
As a postdoctoral researcher, I developed and applied new high-throughput technologies for functional genomics analysis in various systems, mammalian

cell, mouse and yeast. Specifically, I developed and applied array-format high-throughput transfection to identify novel regulators of tumor suppressor protein p53 in a cell-based assay. I also did a screen for novel G2/M checkpoint genes using a complete collection of yeast homozygous deletion strains and identified *rts1* as a G2/M checkpoint gene in yeast. Currently I am using phenotype-driven forward genetic approach to identify cancer-resistant mice in large-scale mutation isolations by the mouse supermutagen N-ethyl-N-nitrosourea (ENU).

1996-2000 University of California, Davis.

My doctoral research involved cloning and characterization of apoptosis-related genes from the host of baculovirus. Specifically, I cloned insect homologs of caspase, inhibitor of apoptosis protein (IAP) and BCL family members and characterized them in both insect and mammalian systems. The identification of these cellular components of apoptosis pathways helped to elucidate the mechanisms of baculovirus-induced apoptosis in insects. These insect IAPs were also engineered to generate disease-resistant plants such as tomatoes.

1993-1995 Shanghai Institute of Biochemistry, Chinese Academy of Sciences.

I optimized expression systems in mammalian and insect cells to maximize the expression level of foreign proteins in both systems.

TEACHING EXPERIENCE

Research advisor.

I have been fortunate enough to advise two undergraduate researchers in the lab. At UC Davis, Aman Samra assisted me in the cloning of insect caspase genes. At Scripps, Rabeah Elbanna helped me in the high-throughput screening of novel p53 regulators. Both Aman and Rabeah learned extensively in the lab and their experiences resulted in graduate and professional schools acceptance.

Teaching assistant.

At UC Davis, I was a teaching assistant for the "Bacteria Physiology" and "Bacteria Genetics" lab courses taught to undergraduate students. These lab courses were designed to educate future biologists and medical students on lab methods of bacteriology. I also lectured in an entomology course on molecular mechanisms of insect hormones and development of novel insecticides.

PUBLICATIONS

Huang, Q., Raya, A., Dejesus, P., Chao, J., Quon, K., Caldwell, J. S., Chanda, S. K., Izpisua-Belmonte, J. C., and Schultz, P. G. (2003) Identification of novel P53 regulators by genome-scale functional analysis. (submitted).

Huang, Q., Yin, H., Oshiro, G., Lai, Y., Melnick, J. S., Winzeler, E. A., Supek, F., and Schultz, P. G. (2003) *Rts1p*, the B'-type regulatory subunit of protein

phosphatase 2A, functions at kinetochore/spindle checkpoint in *Saccharomyces cerevisiae*. (submitted).

Chanda, S. K., White, S., Orth, A., Reisdorph, R., Miraglia, L., Thomas, R., DeJesus, P., Mason, D. E., **Huang, Q.**, Vega, R., Yu, D., Nelson, C., Smith, B. M., Terry, R., Linford, A. S., Yu, Y., Chirn, G., Song, C., Labow, M. A., Cohen, D., King, F., Peters, E., Schultz, P. G., Hogenesch, J., and Caldwell, J. S. (2003) Genome-scale Functional Profiling of the Mammalian AP-1 Signaling Pathway. *Proceedings of National Academy of Sciences* 100(21): 12153-12158.

Pei, Z., Reske, G., **Huang, Q.**, Hammock, B. D., Qi, Y., and Chejanovsky, N. (2002) Characterization of the apoptosis suppressor protein P49 from the *Spodoptera littoralis* nucleopolyhedrovirus. *Journal of Biological Chemistry* 277(50): 48677-48684.

Huang, Q., Deveraux, Q. L., Maeda, S., Stennicke, H. R., Hammock, B. D., and Reed, J. C. (2001) Cloning and Characterization of a Novel Inhibitor of Apoptosis Protein from *Bombyx mori*. *Biochimica et Biophysica Acta* 1499(3):191-198.

Inceoglu, A. B., Kamita, S. G., Hinton, A. C., **Huang, Q.**, Severson, T. F., Kang, K., and Hammock, B. D. (2001) Recombinant Baculoviruses for Insect Control. *Pest Management Science* 57:981-987.

Huang, Q., Deveraux, Q. L., Maeda, S., Salvesen, G. S., Stennicke, H. R., Hammock, B. D., and Reed, J. C. (2000) Evolutionary Conservation of Apoptosis Mechanism: Lepidopteran and Baculoviral IAPs are Inhibitors of Mammalian Caspase-9. *Proceedings of National Academy of Sciences* 97(4):1427-1432.

Zhang, H., **Huang, Q.***, Ke, N., Matsuyama, S., Hammock, B. D., Godzik, A., and Reed, J. C. (2000) Drosophila Pro-apoptotic Bcl-2/Bax Homologue Reveals Evolutionary Conservation of Cell Death Mechanism. *Journal of Biological Chemistry* 275(35):27303-27306.

*co-first author

Hammock, B. D., Kamita, S. G., Inceoglu, A. B., and **Huang, Q.** (2000) Advantages and Disadvantages of Recombinant Baculoviruses in Insect Pest Control. *Phytoparasitica* 28(2):191-192.

Lin, J., Deng, G., **Huang, Q.**, and Morser, J. (2000) KIAP, a Novel Member of the Inhibitor of Apoptosis Protein Family. *Biochemical and Biophysical Research Communications* 279(3):820-831.

ORAL PRESENTATION

Huang, Q., Deveraux, Q. L., Maeda, S., Salvesen, G. S., Stennicke, H. R., Hammock, B. D., and Reed, J. C. Cloning and Characterization of a Novel

Inhibitor of Apoptosis Protein (IAP) from *Spodoptera frugiperda*. American Society for Virology-18th Annual Meeting, University of Massachusetts at Amherst, Amherst, Massachusetts, July 10-14, 1999.

SCIENTIFIC PAPERS REVIEWED

Toxicological Sciences, November 2000.

Insect Molecular Biology, April 2002.

PATENTS

US Patent No. 6,570,069 for Nucleic Acids Encoding Plant Inhibitors of Apoptosis and Transgenic Cells and Plants Expressing Them.

US Patent Pending No. 10/041,859 for Inhibitors of Apoptosis Proteins and Nucleic Acids and Methods for Making and Using Them.

US Patent Pending No. 60/425,351 for Methods and Compositions for Modulating P53 Transcription Factor.

PROFESSIONAL MEMBERSHIPS

American Association for Cancer Research

American Society for Virology

American Institute of Biological Sciences

Phi Sigma, Gamma Delta Chapter

REFERENCES

1. Peter G. Schultz
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Professor, The Scripps Research Institute
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Director, NIEHS-UCD Superfund Basic Research Program
Professor, University of California, Davis
Department of Entomology & Cancer Research Center
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3. John C. Reed
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Professor, Apoptosis and Cell Death Research Program
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5. Jarue S. Manning
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