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Google Scholar: <http://scholar.google.com/citations?user=6pJaOpEAAAJ&hl=en>

Citizenship: China

Immigration Status: U.S. Permanent Residency

EDUCATION

01/2005-11/2009	Ph.D. Entomology	University of Kentucky
09/1997-07/2000	M.S. Aquatic biology	Shanghai Fisheries University, China
09/1993-07/1997	B.S. Biology	East China Normal University, China

RESEARCH EXPERIENCE

11/2009- Present Postdoc Associate. Department of Ecology and Evolutionary Biology, Brown University
Advisor: Dr. Marc Tatar

Areas of Specialization: Aging and metabolism, *Drosophila* genetics, Insulin/FOXO signaling, Next generation sequencing, Proteomics and metabolomics

Molecular basis of longevity and metabolic regulation by insulin signaling in Drosophila

01/2005-11/2009 Research Assistant. Department of Entomology, University of Kentucky
Advisor: Dr. Subba R. Palli

Areas of Specialization: Insect physiology, Functional genomics, Hormonal regulation of development and reproduction, Mosquitoes, Red flour beetles

Dissertation Title: Functional Genomics Approaches to Study Hormone Action in Mosquitoes and Beetles

03/2007 Visiting Scientist. USDA-ARS, Insect Biocontrol Laboratory, Beltsville, MA
Advisor: Dr. Dale Gelman

Enzyme Immuno Assay (EIA) to measure ecdysteroid titer during the blood feeding in Anopheles gambiae

01/2004-01/2005 Research Assistant. Marine Sciences Program, University of Connecticut
Advisor: Dr. Hans Laufer

Effects of bisphenol-A (BPA) on larval growth of the lobster Homarus americanus

09/2000-12/2003 Group lead. Research and Technology Center, Shanghai Maling Aquarius Co.,Ltd
Design and Development of Microwavable Canned Food Products

09/1997-07/2000 Research Assistant. College of Fisheries and Life Science, Shanghai Fisheries University
Advisor: Dr. Weixin Zhao

The regulation of the biosynthesis of methyl farnesoate by mandibular organ in crayfish

01/1997-07/1997 Research Assistant. Department of Biological Science, East China Normal University
Advisor: Dr. Chongang Yuan

Effects of Chinese herb extracts on MPTP-induced mouse model of Parkinson's disease

PUBLICATIONS

(A). Peer-reviewed publications

1. **Bai H**, Kang P, Hernandez AM, Tatar M. 2013. Activin signaling targeted by insulin/dFOXO regulates aging and muscle proteostasis in *Drosophila*. *PLoS Genetics*. 9(11): e1003941. PMCID: PMC3820802.

(Highlighted in Faculty of 1000, Brown News and ScienceDaily)

2. Yamamoto R, **Bai H**, Dolezal AG, Amdam G, Tatar M. 2013. Juvenile hormone regulation of *Drosophila* aging. *BMC Biology*. 11:85. PMCID: PMC3726347.
3. **Bai H**, Kang P, Tatar M. 2012. *Drosophila* insulin-like peptide-6 (dilp6) expression from fat body extends lifespan and represses secretion of *Drosophila* insulin-like peptide-2 from the brain. *Aging Cell*. 11(6):978-85. PMCID: PMC3500397.

(Highlighted in Faculty of 1000)

4. Hong S-H, Lee K-H, Kwak S-H, Kim A-K, **Bai H**, Jung M-S, Kwon O-Y, Song W-J, Tatar M, Yu K. 2012. Minibrain/Dyrk1a regulates food intake through the Sir2-FOXO-sNPF/NPY pathway in *Drosophila* and mammals. *PLoS Genetics*. 8(8): e1002857. PMCID: PMC3410862.
5. Sheng Z, Xu J, **Bai H**, Zhu F, Palli SR. 2011. Juvenile hormone regulates vitellogenin gene expression through insulin-like peptide signaling pathway in the red flour beetle, *Tribolium castaneum*. *Journal of Biological Chemistry*. 286(49):41924-36. PMCID: PMC3234905.
6. **Bai H**, Zhu F, Shah K, Palli SR. 2011. Large-scale RNAi screen of G protein-coupled receptors involved in larval growth, molting and metamorphosis in the red flour beetle. *BMC Genomics*, 12(1):388. PMCID: PMC3163568.
7. **Bai H**, Gelman D. B, Palli SR. 2010. Mode of action of methoprene in affecting female reproduction in the African malaria mosquito, *Anopheles gambiae*. *Pest Management Science*, 66(9):936-43. PMCID: PMC2928151.
8. **Bai H**, Palli SR. 2010. Functional characterization of bursicon receptor and genome-wide analysis for identification of genes affected by bursicon receptor RNAi. *Developmental Biology*, 344(1):248-58. PMCID: PMC2909337.
9. Zhu F, Parthasarathy R, **Bai H**, Woitheb K, Kaussmannb M, Nauenb R, Harrison DA, Palli SR. 2010. A brain-specific cytochrome P450 responsible for the majority of deltamethrin resistance in the QTC279 strain of *Tribolium castaneum*. *The Proceedings of the National Academy of Sciences of the U.S.A.*, 107(19):8557-62. PMCID: PMC2889294.
10. Parthasarathy R, Sun Z, **Bai H**, Palli SR. 2010. Juvenile hormone regulation of vitellogenin synthesis in the red flour beetle, *Tribolium castaneum*. *Insect Biochemistry and Molecular Biology*, 40(5):405-14. PMCID: PMC2875371.
11. Parthasarathy R, Tan A, **Bai H**, Palli SR. 2008. Transcription factor broad suppresses precocious development of adult structures during larval-pupal metamorphosis in the red flour beetle, *Tribolium castaneum*. *Mechanisms of Development*, 125(3-4):299-313. PMCID: PMC3556786.
12. **Bai H**, Parthasarathy R, Palli SR. 2007. Identification and characterization of juvenile hormone esterase gene from the yellow fever mosquito, *Aedes aegypti*. *Insect Biochemistry and Molecular Biology*, 37(8):829-37. PMCID: PMC2020842.
13. Wu Y, Parthasarathy R, **Bai H**, Palli SR. 2006. Mechanisms of midgut remodeling: Juvenile hormone analog methoprene blocks midgut metamorphosis by modulating ecdysone action. *Mechanisms of Development*, 123(7):530-547. PMID: 16829058.

14. Lu J, Chang G, Wu X, **Bai H**, Zhao W, Cheng Y. 2009. The mandibular organ in crustacean and a radiochemical assay for methyl farnesoate. *Fisheries Science*, 28(2):113-116.
15. Lu J, **Bai H**, Cheng Y, Zhao W. 2006. *In vitro* regulation of hormone biosynthesis of the mandibular organ in crayfish, *Procambarus clarkia*. *Journal of Fisheries of China*. Vol.13, No.3, 471-474.
16. Zhao W, **Bai H** *, Lu J. 2002. The regulation of methyl farnesoate biosynthesis in *Procambarus clarkii*. *Journal of Fisheries of China*. Vol.26, Suppl. 1-6.
17. Yuan C, **Bai H**, Yang F. 2002. Effects of the Chinese herb, *Radix polygoni multiflori* on MPTP-induced mouse model of Parkinson's disease. *Journal of East China Normal University (Natural Science)*. No.3, 95-98.
18. Zhao W, **Bai H** *. 2001. The biosynthesis of methyl farnesoate by the mandibular organ in crayfish, *Procambarus clarkii*. *Journal of Fisheries of China*. Vol.25, No.3, 193-196.
19. Zhao W, **Bai H** *, Ma X. 1999. Changes in progesterone contents of the ovary and mandibular organ in crayfish during vitellogenesis. *Journal of Shanghai Fisheries University*. Vol.8, No.3, 232-236.

(* Major contributor. Performed 90% or all of the experiments.)

(B). Book chapters

1. **Bai H**, 2012. Genome-Wide RNAi Screen for the Discovery of Gene Function, Novel Therapeutical Targets and Agricultural Applications. In: *Functional genomics*. Meroni G. and Petrera F. (ed). *InTech*. DOI: 10.5772/49945
2. **Bai H**, Palli SR. 2012. G protein-coupled receptors as target sites for insecticide discovery. In: *Advanced Technologies for Controlling Insect Pests*. Ishaaya I, Palli S.R, Horowitz A.R. (ed). *Springer Science*.
3. Palli SR, **Bai H**, Wigginton J. 2011. Insect genomics and beyond. In: *Insect Biochemistry and Molecular Biology*. Gilbert L. (ed). *Springer Science*.
4. Garry NH, Hill RJ, Dedos SG, Swevers L, Latrou K, Tan A, Parthasarathy R, **Bai H**, Zhang Z, Palli SR. 2009. Applications of RNA interference in ecdysone research. In: *Ecdysone, structures and functions*. G. Smaghhe (ed). *Springer Science*, 205-227.

(C). Manuscripts in preparation

1. **Bai H**, Karashchuk G, Thakore R, Post S, Zheng W, Kang P, Brent C, Tatar M. 2014. Identification of a novel co-factor of insulin/dFOXO signaling in the regulation of lipid homeostasis.
2. **Bai H**, Divakar P, Vasquez S, Tatar M. 2014. Transcriptional regulation of insulin-like peptide by *Drosophila* Kruppel-like factor.
3. **Bai H**, Kang P, Post S, Tatar M. 2014. Eukaryotic translation initiation factor 4E-binding protein, 4EBP acts downstream of insulin signaling to control *Drosophila* lifespan.

GRANTS AND FELLOWSHIPS

- 2014-2019 **NIH/NIA K99/R00 Pathway to Independence Award (1K99AG048016-01)**
 Direct costs: \$924,795.74
 Title: Activin-Mediated Autophagy During Cardiac Aging
 Role: PI
- 2011-2012 **Ellison Medical Foundation/AFAR Postdoctoral Fellow**, \$47,210/yr
 (\$39,360 of Salary, plus \$7,850 of Supplies and Benefit)
- 2008-2009 **Dissertation Year Fellowship Award, University of Kentucky**, \$16,000/yr
- 2013 Keystone Symposia Future of Science Fund Scholarship, Keystone Symposia, \$1200
- 2013 Annual NIA Summer Training fellowship in Experimental Aging Research
 (Sponsored by the National Institute on Aging and the Barshop Institute)
- 2011 Molecular Biology of Aging Summer Training fellowship at Marine Biology Laboratory
 (Sponsored by The Ellison Medical Foundation)
- 2008 Clarke & Knapp Travel Grant, University of Kentucky, \$300
- 2007 Publication Scholarship, University of Kentucky, \$150
- 2005-2008 Student Travel Grant, University of Kentucky, \$1200

AWARDS AND HONORS (After 2005)

- 2008 1st place in Student Oral Presentation Competition at 2008 National Annual Meeting of the Entomological Society of America. Reno, NV
- 2008 2nd place in Ph.D. Oral competition at 2008 Ohio Valley Entomological Association Student Forum, Dow Agrosiences, Indianapolis, IN
- 2007 1st place in the Ph.D. poster competition at 2007 National Conference on Agricultural Genomics, Purdue University
- 2006 2nd place in Student Poster Competition at 2006 National Annual Meeting of the Entomological Society of America. Indianapolis, IN

INVITED TALKS

- 02/2014 COBRE & Orthopaedic Research Seminar. Rhode Island Hospital, Providence, RI.
- 10/2013 Providence Area Aging Research Forum. Brown University, Providence, RI.
- 07/2013 Insect Hormones International Workshop, Minneapolis, MN.
- 10/2012 Molecular Genetics of Aging Meeting, Cold Spring Harbor Laboratory, NY.
- 05/2012 The Boston Aging Data Symposium. Harvard Medical School, Boston, MA.
- 03/2012 Annual Drosophila Research Conference, Chicago, IL.
- 03/2012 Providence Area Aging Research Forum. Brown University, Providence, RI.

SELECTED CONFERENCE ABSTRACT (12 OUT OF 22)

1. **Bai H**, Kang P, Hernandez AM, Tatar M. 2014. TGF- β /Activin signaling targeted by insulin/dFOXO regulates muscle autophagy and protein homeostasis in Drosophila. Keystone Symposia. Steamboat Springs, CO.
2. **Bai H**, Kang P, Hernandez AM, Tatar M. 2013. TGF- β /Activin signaling, the downstream target of dFOXO, regulates longevity through muscle autophagy in Drosophila. 54nd Annual Drosophila Research Conference. Washington DC.

3. **Bai H.** 2012. Identification of dFOXO direct targets regulating lifespan in *Drosophila melanogaster*. 25th Annual AFAR Grantee Conference, Santa Barbara, CA.
4. **Bai H,** Kang P, Tatar M. 2012. Fat body-specific dilp6 over-expression extends lifespan and represses brain insulin secretion in *Drosophila*. The Aging, Biology of Gordon Research Conference, Ventura, CA.
5. **Bai H,** Yamamoto R, Kang P, Tatar M. 2011. Juvenile hormone regulation of lipid and carbohydrate metabolism in adult *Drosophila*. 52nd Annual *Drosophila* Research Conference. San Diego, CA.
6. **Bai H,** Yamamoto R, Kang P, Tatar M. 2010. Lifespan regulation by juvenile hormone of adult *Drosophila*. Molecular Genetics of Aging Conference. Cold Spring Harbor Laboratory, NY.
7. **Bai H,** Parthasarathy R, Palli S.R. 2009. G protein-coupled receptors (GPCRs) as target sites for pesticide development: Genome-wide analysis of GPCRs in the red flour beetle. Annual meeting of the Entomological Society of America. Indianapolis, IN.
8. **Bai H,** Parthasarathy R, Palli S.R. 2008. Genome-wide analysis of G protein-coupled receptors required for development and reproduction in *Tribolium astaneum*. Annual meeting of the Entomological Society of America. Reno, NV.
9. **Bai H,** Parthasarathy R, Palli S.R. 2008. G protein-coupled receptors as target sites for pesticides: Functional characterization of GPCRs in the red flour beetle. Ohio Valley Entomological Association Annual Student Forum. Dow agrosociences, Indianapolis, IN.
10. **Bai H,** Palli S.R. 2007. Development of feeding RNA interference method for the yellow fever mosquito. Ohio Valley Entomological Association Annual Student Forum. Columbus, OH.
11. **Bai H,** R. Parthasarathy, Palli S.R. 2007. Identification and characterization of juvenile hormone esterase of yellow fever mosquito, *Aedes aegypti*. National conference on agricultural genomics at Purdue University, West Lafayette, IN.
12. **Bai H,** Parthasarathy R, Palli S.R. 2006. Identification and characterization of juvenile hormone esterase of yellow fever mosquito, *Aedes aegypti* (Diptera: Culicidae). Annual meeting of the Entomological Society of America. Indianapolis, IN.

TEACHING EXPERIENCE

2014 **Sheridan Teaching Certificate Recipient**
Brown University, Providence, RI

One year training and practice on the development and refinement of fundamental teaching and assessment strategies and communication skills, including following five modules:

- ❖ Reflections on Teaching and Learning
- ❖ Developing Student Learning Goals: Course & Syllabus Design
- ❖ How Students Learn
- ❖ Grading and Evaluation: Measuring Your Students' Learning
- ❖ Rhetorical Practice: Teaching as Persuasive Communication

Fall 2008 University of Kentucky, Lexington, KY

- ❖ Teaching Assistant for ENT 635, Insect Physiology Course (With Dr. Subba R. Palli)
- ❖ Laboratory Instructor for ENT 635, Insect Physiology Course
 - ◆ Taught lab lectures (one hour per section)
 - ◆ Led 10 wet-lab sections that met 3 hr / week
 - ◆ Led ~50 hrs course project on RNA interference in the red flour beetle

Fall 1998 Shanghai Fisheries University, Shanghai, China

- ❖ Teaching Assistant for Animal Physiology Course (With Prof. Weixin Zhao)
- ❖ Laboratory Instructor for Animal Physiology Course
 - ◆ Taught lab lectures (one hour per section)
 - ◆ Led 8 wet-lab sections that met 3~4 hr / week

Fall 1996 Dongchang Middle School, Shanghai, China

Biology teacher

Taught 8-week General Biology Course and Laboratory (Seventh Grade).

MENTORING EXPERIENCE (~ 10 graduate and undergraduate students)

2010- Brown University, Providence, RI

- ❖ Rachel Thakore: The role of juvenile hormone in lipid metabolism in adult *Drosophila*
- ❖ Stephanie Vasquez: Transcriptional regulation of insulin-like peptides in *Drosophila*
- ❖ Prashanthi Divakar: Identification of dFOXO direct target genes regulating lifespan in *Drosophila*
- ❖ Eric Bai: The cross-talk between juvenile hormone and insulin signaling in *Drosophila*
- ❖ Michael Lin: Phosphoproteomics of *Drosophila* insulin signaling
- ❖ Stephanie Post: The nutritional geometry of insulin-like peptides in adult *Drosophila*

2005-2009 University of Kentucky, Lexington, KY

- ❖ Aline Mackert: Identification of a juvenile hormone esterase-like gene in the honey bee
- ❖ Zhiyuan Sun: The role of juvenile hormone in vitellogenesis in the red flour beetle
- ❖ Yipeng Sui: Transcriptional regulation of Kr-h1 in the yellow fever mosquito

Ad hoc GRANT REVIEWER

03/2013 National Science Foundation, International Science & Engineering proposal

08/2012 National Science Foundation, BIO/IOS-PSS proposal

Ad hoc JOURNAL REVIEWER (17 JOURNALS)

Cell Report; Aging Cell; PLoS Genetics; PLoS One; BMC Genomics; Insect biochemistry and molecular biology; Journal of Insect Physiology; Journal of Insect Science; Archives of Insect Biochemistry and Physiology; Pest Management Science; Pesticide Biochemistry and Physiology; Journal of Applied Entomology; Journal of Economic Entomology; Journal of Medical Entomology; Environmental Entomology; Annals of the Entomological Society of America; The Canadian Entomologist

PUBLIC SERVICES

2008 Co-organizer of Student Network of the Entomological Society of America

2008 Judge for the 2008 Kentucky American Water – Fayette County Public Schools District Science Fair, Lexington, KY

2006/7 Volunteer for Annual Meeting of the Entomological Society of America

1999 President of Graduate Student Congress, Shanghai Fisheries University, China

PROFESSIONAL AFFILIATIONS

- Genetics Society of America 2010-present
- Entomological Society of America 2005- 2009
- Ohio Valley Entomological Society 2005, 2007-2008

REFERENCES**Subba R. Palli, Ph.D. (Ph.D. Advisor)**

Professor of Entomology
Dept. of Entomology
University of Kentucky
S-225 Agricultural Science Center North, Lexington, KY 40546
Phone: 859-257-4962, Fax: 859-323-1120
Email: rpalli@uky.edu

Marc Tatar, Ph.D. (Postdoc Advisor)

Professor of Biology
Dept. of Ecology and Evolutionary Biology
Brown University
Box G-W, Providence, RI 02912
Phone: 401-863-3455, Fax: 401-863-2166
Email: Marc_Tatar@Brown.edu

Rolf Bodmer, Ph.D. (Collaborator)

Professor of Biology
Director of Development, Aging, and Regeneration Program
Sanford Burnham Medical Research Institute
10901 North Torrey Pines Road, La Jolla, CA 92037
Phone: (858) 646-3100 Fax: (858) 795-5298
Email: rolf@sanfordburnham.org

Gideon Koren, M.D. (Collaborator)

Professor of Medicine
Director of the Cardiovascular Research Center
Rhode Island Hospital
593 Eddy St., Aldrich 307 Providence, RI 02903
Phone: (401) 444-4629, (401) 444-4061
Email: gideon_koren@brown.edu

Robert Wessells, Ph.D. (Collaborator)

Assistant Professor of Medicine
Department of Physiology
Wayne State University
5374 Scott Hall, 540 E. Canfield, Detroit, MI 48201
Phone: (313) 577-1520 Fax: (313) 577-5494
Email: rwessell@med.wayne.edu