

**ANGELA HO, Ph.D.**

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Boston University  
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**EDUCATION**

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1993-1998	Ph.D. in Neurobiology	Mount Sinai School of Medicine, N.Y.
1987-1991	B.S. in Biology	State University of New York, Binghamton, N.Y.

**ACADEMIC APPOINTMENTS**

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2010-present	Faculty, Division of Graduate Medical Sciences, Boston University School of Medicine, Boston, MA
2009-present	Faculty, Graduate Program in Neuroscience, Boston University, Boston, MA
2009-present	Faculty, Molecular Biology, Cell Biology and Biochemistry Graduate Program, Boston University, Boston, MA
2008-present	Assistant Professor, Department of Biology, Boston University, Boston, MA

**TRAINING**

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2007-2008	Instructor with Dr. Jie Shen Department of Neurology, Harvard Medical School, Boston, MA
2006-2007	Instructor with Dr. Thomas C. Südhof Department of Neuroscience, University of Texas at Southwestern Medical Center at Dallas, TX
2005-2006	Assistant Instructor with Dr. Thomas C. Südhof Department of Neuroscience, University of Texas at Southwestern Medical Center at Dallas, TX
1999-2005	Postdoctoral Fellow with Dr. Thomas C. Südhof Department of Neuroscience, University of Texas at Southwestern Medical Center at Dallas, TX
1993-1998	Ph.D. Student with Dr. Mariann Blum Fishberg Center for Neurobiology, Mount Sinai School of Medicine, N.Y.
1991-1993	Research Assistant with Dr. Jerome Posner Department of Neuro-Oncology, Memorial Sloan-Kettering Cancer Center, N.Y.
1990-1991	Undergraduate Researcher with Dr. David Chase Department of Biology, State University of New York, Binghamton, N.Y.

**AWARDS AND HONORS**

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2009-2013	Investigator Initiated Research Grant from Alzheimer's Association
2006-2011	Mentored Research Scientist Development Award (K01), National Institute of Aging
1999-2002	National Research Service Award (NRSA), National Institute of Aging
1996-1997	Developmental Biology Training Award, Mount Sinai School of Medicine, N.Y.

## TEACHING EXPERIENCE

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2012	Director, Readings in Biology: Neurodegeneration (BI582)
2011-present	Director, Molecular Biology of the Neuron (BI481)
2011-present	Guest Lecturer, Advanced Biochemistry (MB722)
2009-present	Co-Director, Principles of Neurobiology (BI325)
1996-1997	Teaching Assistant, Medical Gross Neuroanatomy
1990-1991	Teaching Assistant, Introductory Biology Laboratory Core II

## PROFESSIONAL ACTIVITIES

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2011	National Advisory Scientific Council for American Federation of Aging
2010	Reviewer, The Alzheimer's Association
2010	Panelist Reviewer, Neural Systems Study Section, National Science Foundation
2008-present	<i>Ad hoc</i> Reviewer for: Proceedings of the National Academy Sciences Journal of Neuroscience Nature Gene Therapy Molecular and Cellular Biology Molecular Psychiatry
2008	Discussion Leader, Gordon Conference for Neurobiology of Brain Disorders: Circuit Dysfunction and Neurodegeneration, Oxford, England
1995-present	Member, Society for Neuroscience

## PUBLICATIONS: RESEARCH ARTICLES

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1. Sullivan SE, Dillon GM, Sullivan JM, **Ho A** (2014) Mint proteins are required for synaptic activity-dependent APP trafficking and amyloid-beta generation. *Journal of Biological Chemistry*, 289:15374-15383.
2. Peritore CS, **Ho A**, Yamamoto BK, Schaus SE (2012) Resveratrol attenuates L-DOPA-induced hydrogen peroxide toxicity in neuronal cells. *NeuroReport*, 23:989-994.
3. Beffert U, Dillon GM, Sullivan JM, Stuart CE, Gilbert JP, Kambouris JA, **Ho A** (2012) Microtubule plus-end tracking protein CLASP2 regulates neuronal polarity and synaptic function. *Journal of Neuroscience*, 32:13906-13916.
  - Our findings provide evidence for involvement of CLASP2 in cytoskeleton-related mechanisms underlying neuronal polarity and interplay between the microtubule stabilization and synapse formation and activity.
4. Chauffy J, Sullivan SE, **Ho A** (2012) Intracellular amyloid precursor protein sorting and amyloid- $\beta$  secretion are regulated by src-mediated phosphorylation of Mint2. *Journal of Neuroscience* 32:9613-9625.
  - We showed that Mint proteins are important for APP trafficking and A $\beta$  generation. Our findings indicate that Src-mediated phosphorylation of Mint2 regulates APP endocytic sorting pathways and suggest a mechanism for regulating intracellular and extracellular A $\beta$  pools that may be relevant to AD pathogenesis.

5. Matos MF, Xu Y, Dulubova I, Otwinowski Z, Richardson III JM, Tomchick DR, Rizo J, **Ho A** (2012) Autoinhibition of Mint1 adaptor protein regulates APP binding and processing. ***Proceedings of the National Academy Sciences*** 109:3802-3807.
  - Found that the Mint1 PTB domain that binds to APP is intramolecularly inhibited by the adjacent C-terminal linker region which forms a short  $\alpha$ -helix that folds back onto the PTB domain and sterically hinders APP binding. Our findings suggest that an autoinhibitory mechanism in Mint1 is important for regulating APP processing and may provide novel therapies for AD.
6. **Ho A** and Shen J (2011) Presenilins in synaptic function and disease. ***Trends in Molecular Medicine*** 17:617-624.
7. Zhang D\*, Zhang C\*, **Ho A\***, Kirkwood A, Südhof TC, Shen J (2010) Inactivation of presenilins causes presynaptic impairment prior to postsynaptic dysfunction. ***Journal of Neurochemistry*** 115:1215-1221. (\* Co-first authors).
8. Mukherjee K, Yang X, Gerber SH, Kwon HB, **Ho A**, Castillo PE, Liu X, Südhof TC (2010) Piccolo and bassoon maintain synaptic vesicle clustering without directly participating in vesicle exocytosis. ***Proceedings of the National Academy Sciences*** 107:6504-6509.
9. Aoki C, Lee J, Nedelescu H, Ahmed T, **Ho A**, Shen J (2009) Increased levels of NMDA receptor NR2A subunits at pre- and postsynaptic sites of the hippocampal CA1: an early response to conditional double knockout of presenilin 1 and 2. ***Journal of Comparative Neurology*** 517:512-523.
10. **Ho A\***, Liu X, Südhof TC\* (2008) Deletion of Mint proteins decreases amyloid production in transgenic mouse models of Alzheimer's disease. ***Journal of Neuroscience*** 28:14392-14400. (\* Corresponding authors).
  - Found that deletion of Mint1, Mint2 or Mint3 proteins can dramatically suppress A $\beta$ -production and  $\beta$ -amyloid plaque formation in Alzheimer's disease (AD) mouse models, thus suggesting that Mint proteins are involved in A $\beta$  neuropathology in AD brains.
11. Atasoy D, Schoch S, **Ho A**, Nadasy KA, Liu X, Zhang W, Mukherjee K, Nosyreva ED, Fernandez-Chacon R, Missler M, Kavalali ET, Südhof TC (2006) Deletion of CASK produces lethality with impaired synaptic function. ***Proceedings of the National Academy Sciences*** 104:2525-2530.
12. **Ho A\***, Morishita W, Atasoy D, Liu X, Tabuchi K, Hammer RE, Malenka RC, Südhof TC\* (2006) Genetic analysis of Mint/X11 proteins: Essential presynaptic functions of a neuronal adaptor protein family. ***Journal of Neuroscience*** 26:13089-13101 (\* Corresponding authors).
  - Fully characterized the genetic analysis of Mint/X11 proteins and found that they are important regulators of presynaptic neurotransmitter release and essential for mouse survival. Hippocampal slice electrophysiology uncovered a decline in spontaneous neurotransmitter release, lowered synaptic strength, and enhanced paired-pulse facilitation in Mint-deficient mice, suggesting a decreased presynaptic release probability.
13. Dulubova I, **Ho A**, Huryeva I, Südhof TC, Rizo J (2004) Three-dimensional structure of an independently folded extracellular domain of human amyloid-beta precursor protein. ***Biochemistry*** 43:9583-9588.
  - Identified that the extracellular domain of APP is independently folded through its three-dimensional structure determined by NMR spectroscopy.

14. **Ho A**, Südhof TC (2004) Binding of F-spondin to amyloid-beta precursor protein: a candidate amyloid-beta precursor protein ligand that modulates amyloid-beta precursor protein cleavage. ***Proceedings of the National Academy Sciences*** 101:2549-2553.
  - Discovered F-spondin, a secreted neuronal protein can bind to the extracellular domain of APP and inhibit the initial cleavage of APP. This indicates that F-spondin may be an endogenous regulator of APP cleavage, and suggest that the extracellular domain of APP could be a potential drug target by interfering with cleavage.
15. **Ho A**, Morishita W, Hammer RE, Malenka RC, Südhof TC (2003) A role of Mints in transmitter release: Mint 1 knockout mice exhibit impaired GABAergic synaptic transmission. ***Proceedings of the National Academy Sciences*** 100:1409-1414.
  - Found that deletion of Mint 1 does not impair survival or alter overall brain architecture arguing against an essential developmental function. In inhibitory synapses, we found an increase in presynaptic depression thereby suggesting that deletion of Mint 1 impairs the regulation of inhibitory GABA release.
16. Sugita S, **Ho A**, Südhof TC (2001) NECABs A family of neuronal Ca<sup>2+</sup>-binding proteins with an unusual domain structure and a restricted expression pattern. ***Neuroscience*** 112:51- 63.
17. Garcia de Yebenes E, **Ho A**, Damani T, Fillit H, Blum M (1999) Regulation of the heparin sulfate proteoglycan, perlecan, by injury and interleukin-1 alpha. ***Journal of Neurochemistry*** 73:812-820.
18. **Ho A**, Blum M (1998) Induction of interleukin-1 associated with compensatory dopaminergic sprouting in the denervated striatum of young mice: model of aging and neurodegenerative disease. ***Journal of Neuroscience*** 18:5614-5629.
19. **Ho A**, Blum M (1997) Regulation of astroglial-derived dopaminergic neurotrophic factor gene expression by interleukin-1 $\beta$  in the striatum of young and middle-aged mice. ***Experimental Neurology*** 148:348-359.
20. Gore AC, Yeo TT, **Ho A**, Roberts JL (1997) Post-transcriptional regulation of the gonadotropin-releasing hormone gene in GT1-7 cells. ***Journal of Neuroendocrinology*** 9:271-277.
21. Gore AC, **Ho A**, Roberts JL (1995) Translational efficiency of gonadotropin-releasing hormone mRNA is negatively regulated by phorbol ester in GT1-7 cells. ***Endocrinology*** 136:1620-1625.
22. **Ho A**, Gore AC, Blum M (1995) Glutamate regulation of GDNF gene expression in the striatum and in primary striatal astrocytes. ***NeuroReport*** 6: 1454-1458.
23. Dalmau J, Graus F, Cheng NK, Rosenblum MK, **Ho A**, Canete A, Delattre JY, Thompson SJ, Posner JB (1995) Major histocompatibility proteins, anti-Hu antibodies, and paraneoplastic encephalomyelitis in neuroblastoma and small cell lung cancer. ***Cancer*** 75:99-109.
24. Walter JC, Dalmau J, **Ho A**, Posner JB (1994) Analysis of the IgG subclass distribution and inflammatory infiltrates in patients with anti-Hu-associated paraneoplastic encephalomyelitis. ***Neurology*** 44:140-147.

## ACADEMIC SERVICES (SELECTED)

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### Boston University, Department of Biology

2013	Beckman Scholar Committee
2011-2012	Neurobiology Faculty Search Committee
2011	Beckman Scholar Committee
2011-present	Cell and Molecular Biology Graduate School Admissions Committee
2010-present	Graduate Student Committee
2009-present	Graduate Student Recruitment Weekend
2009-present	Graduate Student Thesis Committee
2009-present	Graduate Student Qualifying Committee
2009-present	Undergraduate Student Advising for General Biology, Biology Specialization in Cell and Molecular Biology, Neurobiology, and Biochemistry-Molecular Biology
2009-present	Graduate Student Advising for the Biology specialization in Cell and Molecular Biology and Neurobiology

### Boston University Service

2010	Speaker for Center for Talented Youth, Science and Technology Series – Neuroscience hosted by Boston University
2009-2010	Judge for Science and Engineering Day Poster Session, Boston University
2008	Participant for WISE, Warren Program

## STUDENT SUPERVISED

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### Undergraduate

	Name
2014-present	Sun Bae
2014-present	Isabel Ruo
2014	Sheila Okere (SURF)
2014-present	Elias Fong
2013-present	Camila Tyminski
2013	Sebastian Gil (SURF)
2013-present	Kirsten Kuhn
2012-present	Alicia Dupre
2012-present	John Kambouris
2012	Hena Choudhry
2011-2013	Josefa Sullivan
2011-2012	Christine Stuart
2011	Rebecca Wilken
2010-2011	Domenic Filingeri
2010-2011	Alexander Moise
2010-2011	Dana Simmons
2009-2010	Anthony Esposito
2009	Samantha Bettencourt
2009	Han Park
2008-2010	Felecia Marottoli

### MA student

	Name
2011-2012	Christine Stuart
2010-2012	James Gilbert

### Graduate

	Name
2014-present	Tyler Ash
2014-present	Andressa Mota
2014-present	Amy Lin
2010-present	Greg Dillon
2009-2013	Sarah Sullivan
2009-2012	Jeremy Chaufty

### Postdoctoral

	Name
2009-2012	Maria Matos, Ph.D.