

Altar Sorkaç

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Education

Brown University, Providence, RI PhD, Neuroscience	2009-2015
Boğaziçi University, Istanbul, Turkey BS, Molecular Biology and Genetics <i>Highest GPA, with honors</i>	2005-2009
Galatasaray High School, Istanbul, Turkey Middle School and High School <i>Third Highest GPA</i>	1997-2005

Research Experience

Postdoctoral Research Associate	2015-2020
Research Associate	2020-present
Neuroscience Department Brown University, Providence, RI Mentor: Gilad Barnea, PhD	

Main Projects

- Development of *retro*-Tango: a retrograde transsynaptic labeling system in *Drosophila*
- Development of *p*-Tango: parallel anterograde tracing from two separate groups of neurons in *Drosophila*
- Development of *ds*-Tango: Disynaptic anterograde tracing system
- Development of larval *trans*-Tango and its application to reveal the circuit mediating the light avoidance behavior in *Drosophila* larvae

Side Projects

- Development of *trans*-Tango: an anterograde transsynaptic labeling system in *Drosophila*
- Development of a new generation TangoMap in *Drosophila*: Using CRISPR/Cas9-mediated homologous recombination to accurately monitor the activity of GPCRs in *Drosophila*
- Development of *trans*-Tango in mice
- Development of TangoMap in mice: Using CRISPR/Cas9-mediated homologous recombination to accurately monitor the activity of the oxytocin receptor
- Study of mouse vomeronasal organ function via CRISPR/Cas9-mediated receptor knockout

Graduate Student/Research Associate	2009-present
Neuroscience Graduate Program Brown University, Providence, RI Mentor: Anne C. Hart, PhD	

- Characterizing the role of Notch signaling at the *C. elegans* neuromuscular junction using genetic, behavioral and molecular techniques

- Modeling rare diseases in *C. elegans* using CRISPR/Cas9-mediated homologous recombination

Summer intern

08/2008-10/2008

Laboratory of Neurochemistry

Fondazione Santa Lucia

University of Rome Tor Vergata, Rome, Italy

Mentor: Maria-Teresa Carri, PhD

- Cell culture and biochemistry techniques to study amyotrophic lateral sclerosis

Undergraduate Student

03/2008-07/2009

Neurodegeneration Research Laboratory

Suna and İnan Kırac Foundation

Boğaziçi University, Istanbul, Turkey

Mentor: A. Nazlı Başak, PhD

- Human genetics of amyotrophic lateral sclerosis with a focus on SOD1 mutations in the Turkish population

Undergraduate Student

09/2007-02/2008

Psychobiology Laboratory

Boğaziçi University, Istanbul, Turkey

Mentor: Reşit Canbeyli, PhD

- Behavioral experiments on depression using rats

Research articles

Altar Sorkaç, Rareş A Moşneanu, Anthony M Crown, Doruk Savaş, Angel M Okoro, Mustafa Talay, Gilad Barnea. **retro-Tango enables versatile retrograde circuit tracing in *Drosophila*.** *under review*

Preprint available at: [bioRxiv](https://www.biorxiv.org/)

Altar Sorkaç*, Yiannis A Savva*, Doruk Savaş*, Mustafa Talay, Gilad Barnea. **Circuit epistasis analysis reveals a neural pathway for light avoidance in *Drosophila* larvae.** *Nat. Commun.*, 2022

* Equal Contribution

Kristin M Scaplen, Mustafa Talay, John D Fisher, Raphael Cohn, **Altar Sorkaç**, Yoshinori Aso, Gilad Barnea, Karla R Kaun. **Transsynaptic mapping of *Drosophila* mushroom body output neurons.** *eLife*, 2021

Mustafa Talay, Ethan B Richman, Nathaniel J Snell, Griffin G Hartmann, John D Fisher, **Altar Sorkaç**, Juan F Santoyo, Cambria Chou-Freed, Nived Nair, Mark Johnson, John R Szymanski, Gilad Barnea. **Transsynaptic mapping of second-order taste neurons in flies by *trans-Tango*.** *Neuron*, 2018

Altar Sorkaç, Michael A. Dilorio, Patrick J. O'Hern, Huiyan Huang, Hannah K. Graham, Anne C. Hart. **LIN-12/Notch regulates GABA signaling at the *C. elegans* neuromuscular junction.** *G3: Genes, Genomes, Genetics*, 2018

Altar Sorkaç, Ivan C Alcantara, Anne C Hart. **In Vivo Modelling of ATP1A3 G316S-Induced Ataxia in *C. elegans* Using CRISPR/Cas9-Mediated Homologous Recombination Reveals Dominant Loss of Function Defects.** *PLoS One*, 2016

Maria Dimitriadi, Aaron Derdowski, Geetika Kalloo, Melissa S Maginnis, Patrick O'Hern, Bryn Bliska, **Altar Sorkaç**, Ken CQ Nguyen, Steven J Cook, George Poulogiannis, Walter J Atwood, David H Hall, Anne C Hart. **Decreased Function of Survival Motor Neuron Protein Impairs Endocytic Pathways.** *Proceedings of the National Academy of Sciences, 2016*

Edward N Anderson, Mark E Corkins, Jia-Cheng Li, Komudi Singh, Sadé Parsons, Tim M Tucey, **Altar Sorkaç**, Huiyan Huang, Maria Dimitriadi, David A Sinclair, Anne C Hart. **C. elegans lifespan extension by osmotic stress requires FUDR, base excision repair, FOXO, and sirtuins.** *Mechanisms of ageing and development, 2016*

John D Fisher*, **Altar Sorkaç***, Anthony M Crown*, Sasha Martinez-Machado, Nathaniel Snell, Neel J Vishwanath, Gilad Barnea. **ds-Tango: A disynaptic tracing technique in *Drosophila*.** *in preparation*

* Equal Contribution

Select Scientific Presentations

Altar Sorkaç, Rareş A Moşneanu, Anthony M Crown, Doruk Savaş, Angel M Okoro Mustafa Talay, Gilad Barnea. *retro-Tango: An unbiased retrograde transsynaptic labeling method in *Drosophila*.* Poster, FENS forum, Paris, France 2022

Altar Sorkaç, Michael A. Dilorio, Hannah K. Graham, Anne C. Hart. Notch signaling regulates synaptic transmission at the *C. elegans* neuromuscular junction. Poster. The Notch Meeting, Athens, Greece 2013

Altar Sorkaç, Michael A. Dilorio, Hannah K. Graham, Anne C. Hart. Notch signaling regulates synaptic transmission at the *C. elegans* neuromuscular junction. Poster. International worm meeting, Los Angeles, CA, 2013

Altar Sorkaç, Michael A. Dilorio, Anne C. Hart. Notch signaling regulates synaptic transmission at the *C. elegans* neuromuscular junction. Poster. Society for Neuroscience annual meeting, New Orleans, LA, 2012

Altar Sorkaç, Michael A. Dilorio, Anne C. Hart. Notch signaling regulates synaptic transmission at the *C. elegans* neuromuscular junction. Poster. *C. elegans* neurobiology meeting, Heidelberg, Germany, 2012

Komudi Singh, Heather L. Bennett, **Altar Sorkaç**, Michael A. Dilorio, Anne C. Hart. Notch signaling regulates many aspects of quiescence during *C. elegans* lethargus. International worm meeting, UCLA, Los Angeles, CA, 2011

Professional/Teaching Experience

Speaker 2019
4th Suna Kiraç Workshop on Neurodegenerative Disease
Koç University Hospital, KUTTAM, Istanbul, Turkey

Teaching assistant 2015
3rd Suna Kiraç Workshop on Neurodegenerative Disease
Boğaziçi University, Istanbul, Turkey

Tutor Developmental Neurobiology Course Okinawa Institute of Science and Technology, Okinawa, Japan	2014
Teaching assistant 2 nd Suna Kiraç Workshop on Neurodegenerative Disease Boğaziçi University, Istanbul, Turkey	2013
Teaching assistant 1 st Suna Kiraç Workshop on Neurodegenerative Disease Boğaziçi University, Istanbul, Turkey	2011
Teaching Assistant Principles of Neurobiology Brown University, Providence, RI	2010
Member of the organizational committee Suna Kiraç Conference on Neurodegeneration Boğaziçi University - Pera Museum, Istanbul, Turkey	2009
Teaching Assistant Introduction to Biology Boğaziçi University, Istanbul, Turkey	2009
Private Tutor High School Biology in French	2005-2008

Honors and Awards

Brown NSGP annual retreat, Best student research poster award	2012
Brown Institute for Brain Science, Suna Kiraç Fund for Brain Science	2009-2012
The Scientific and Technological Research Council of Turkey, Fellowship	2005-2009
Suna and İnan Kiraç Foundation, Freshman year fellowship	2005-2006
Galatasaray High School, İnan Kiraç excellence award	2005

Professional Memberships

American Association for the Advancement of Science	2014-present
Genetics Society of America	2011-present
Society for Neuroscience	2009-present
Galatasaray Sports Club Foundation	2007-present
Galatasaray Alumni Association	2005-present

Languages

Turkish	native speaker
French	advanced level
English	advanced level
Italian	intermediate level