Body

Kampmann group publishes a paper in Nature Neuroscience detailing their work ito identify the molecular signature of neurons selectively to Alzheimer?s disease

A hallmark of neurodegenerative diseases is that specific neurons are vulnerable, whereas others are resilient. While selectively vulnerable neurons are well-characterized for Parkinson?s disease and ALS, much less is known about those neurons most vulnerable to Alzheimer?s disease, the most common neurodegenerative disease.

In a study published today in *Nature Neuroscience*, the Kampmann lab at the IND collaborated with Dr. Lea Grinberg?s lab at the UCSF Memory and Aging Center to identify the molecular signature of neurons selectively to Alzheimer?s disease. Kampmann lab students Kun Leng and Emmy Li led the project and used single-nucleus RNA sequencing in postmortem human brain samples to uncover neuron populations that accumulate tau pathology and die early in disease.

Future work will test which of the factors expressed by these vulnerable neurons cause vulnerability, using the CRISPR-based functional genomics platform in neurons developed previously by the Kampmann lab. Such factors are potential therapeutic targets to turn vulnerable neurons into resilient neurons in Alzheimer?s disease.

Read the UCSF news release here. [1]

Reference: Kun Leng*, Emmy Li*, Rana Eser, Antonia Piergies, Rene Sit, Michelle Tan, Norma Neff, Song Hua Li, Roberta Diehl Rodriguez, Claudia Kimie Suemoto, Renata Elaine Paraizo Leite, Carlos A. Pasqualucci, William W. Seeley, Salvatore Spina, Helmut Heinsen, Lea T. Grinberg+, Martin Kampmann+. Molecular characterization of selectively vulnerable neurons in Alzheimer?s disease. Nat Neurosci (2021). https://doi.org/10.1038/s41593-020-00764-7 [2]

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[1] https://www.ucsf.edu/news/2021/01/419501/brain-cells-most-vulnerable-alzheimers-disease-identified-scientists
[2] https://doi.org/10.1038/s41593-020-00764-7