Distinct Spatiotemporal Response Properties of Excitatory Versus Inhibitory Neurons in the Mouse Auditory Cortex

Ido Maor, Amos Shalev, and Adi Mizrahi

In the auditory system, early neural stations such as brain stem are characterized by strict tonotopy. This organization is believed to play a role in deconstructing sounds to their basic frequencies. But recent evidence suggests that higher along the auditory hierarchy, as early as primary auditory cortex, strict tonotopy starts breaking down at local circuits.
Ido Maor (with co authors Ami Shalev and Adi Mizrahi) used two-photon targeted patch clamp to carefully map the response profiles of excitatory vs inhibitory neurons in the mouse auditory cortex. They found completely different maps for excitatory and inhibitory neurons. While excitatory maps were sparse and heterogeneous, the inhibitory maps were homogenous. These different maps that are intertwined within the same cortical circuit suggest unique roles for these cell types in the way the cortex encodes natural sounds.

Full article at: [http://cercor.oxfordjournals.org/content/early/2016/09/02/cercor.bhw266.full.pdf](http://cercor.oxfordjournals.org/content/early/2016/09/02/cercor.bhw266.full.pdf)

Tags: Article of the Month
Our Int'l Ph.D. program provides outstanding students with top-notch courses in computational neuroscience.

**read more**

**The Building**

![Image of The Jerusalem Brain Sciences Building](image1.png)

The Jerusalem Brain Sciences Building will provide a state-of-the-art research and teaching facility for the Edmond and Lily Safra Center for Brain Sciences.

**read more**

**ELSC Media Channel**

![Image of ELSC Media Channel](image2.png)

Get into our media channel and investigate ELSC's latest videos: seminars, public lectures, courses and video articles.

**read more**

Source URL: [http://elsc.huji.ac.il/content/article-month-january-2017-mizrahis-lab](http://elsc.huji.ac.il/content/article-month-january-2017-mizrahis-lab)