



Life Sciences Seminar

A behavioral and network mechanism accounting for hallmarks of autism in mice

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Autism Spectrum Disorder (ASD) is a mental condition involving genetic and environmental components. The underlying circuit mechanisms are unclear, but behaviorally, aversion towards unfamiliarity, a hallmark of autism, might be involved. Understanding and treating autism would likely benefit from mechanistic studies in model organisms, but whether bona fide ASD-like deficits can be modeled and investigated in mice has remained unclear. I will discuss recent results from our lab providing evidence that in Shank3^{-/-} ASD model mice, exposure to novel environments produces long-lasting failure to engage and repetitive behaviors upon re-exposure, two hallmarks of autism. In Shank3^{-/-} mice, a prelimbic cortex (PreL)-dependent memory upon first exposure led to failure to recruit appropriate PreL->Tail of striatum activity required for engagement at re-exposure. Inclusion of familiar features at first exposure prevented subsequent failure to engage in Shank3^{-/-} mice. Therefore, novel context experience has a key role to trigger ASD-like phenotypes in genetically predisposed mice, and behavioral therapies involving familiarity and enrichment might prevent the emergence of ASD phenotypes.

Tuesday, November 23, 2021 01:30pm - 02:30pm

Online Event

(<https://istaustria.zoom.us/j/93863516836?pwd=c2pDVXJvcTh1V0NFVm4zamdjcE1iQT09> Meeting ID: 938 6351 6836 Passcode: 538453)



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