Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Webinar

Sleeping to mend broken wings – A Drosophila wing circuit mediates an adaptive sleep function

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Sleep is plastic and influenced by ecological factors and environmental changes. An influential theory of sleep function that highlights the impact of ecological factors, posits that sleep maintains animals in a state of adaptive inactivity i.e. animals sleep to stay out of harm's way. The mechanisms that might regulate such an adaptive function or sleep-plasticity in general, are not well understood. Here, I show that manipulations that impair flight in Drosophila increase sleep as a form of sleep-plasticity. Further, I have identified a novel neural circuit that mediates this effect. This circuit consists of pheromone-sensitive sensory neurons, their partner projection neurons, and targets of the projection neurons in the brain. These data reveal an unexpected role for flight in regulating sleep, and provide new insight into how sensory processing controls sleep need, and impacts adaptive behaviour.

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9:00 AM