

BCS Colloquium

By Dr. Junho Lee

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- Apr. 18th, 2014 (4:00 p.m.-5:30 p.m.)
- Mok-am Hall (Floor 1st, Bldg 501)

“Mind of a starving worm : genetics and cell biology of a dispersal behavior of the nematode *C. elegans*”

Many nematodes show a stage-specific behavior called nictation in which a worm stands on its tail and waves its head in three dimensions. We have shown that nictation is a dispersal behavior regulated by a specific set of neurons, the IL2 cells, in *C. elegans*. In this study, we show that the tendency to perform nictation is determined by multiple signaling pathways in response to the environmental cues. We found that the insulin-like signaling pathway and the TGF beta pathway, both of which are involved in dauer formation, but not the nuclear hormone signaling involving dafachronic acid, are required for the regulation of nictation tendency. Furthermore, we found that, unlike in dauer formation where the two pathways act in parallel, the TGF beta pathway acts downstream of the insulin-like signaling pathway, suggesting that the quantitative entities of environmental cues are converged on a single pathway. I will discuss basic and advanced genetic tools employed in our studies and the physiological significance of our findings.



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