



REGIONAL CENTRE FOR BIOTECHNOLOGY
Journal Club

“Neuronal Control of *Drosophila* Walking Direction”
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Seminar room, ATPC building

Abstract

Most land animals normally walk forward but switch to backward walking upon sensing an obstacle or danger in the path ahead. A change in walking direction is likely to be triggered by descending “command” neurons from the brain that act upon local motor circuits to alter the timing of leg muscle activation. Here we identify descending neurons for backward walking in *Drosophila*—the MDN neurons. MDN activity is required for flies to walk backward when they encounter an impassable barrier and is sufficient to trigger backward walking under conditions in which flies would otherwise walk forward. We also identify ascending neurons, MAN, that promote persistent backward walking, possibly by inhibiting forward walking. These findings provide an initial glimpse into the circuits and logic that control walking direction in *Drosophila*.
