

Plants are sessile organisms that undergo indeterminate growth to respond to their surroundings. Meristems allow for this flexible morphology, so determining how the meristem is maintained is crucial to understanding this phenomenon. We focus on the root apical meristem (RAM) because it is highly organized, and cell-specific manipulation is well established. In the center of the RAM, there is a pool of stem cells called the quiescent center (QC) that maintains the stemness of the surrounding cells and replenishes damaged cells. Many signaling pathways are involved in QC maintenance, but the cross-talk between them is largely unknown. Here, we investigate the relationship between CLAVATA3/EMBRYO SURROUNDING REGION (CLE) peptide signaling with cytokinin and other phytohormones. We demonstrate that CLE signaling is necessary for phytohormone-driven QC divisions and appears to function as a signal integrator. Elucidating these mechanisms can lead to further understanding of how stem cells are maintained and how plants determine their morphology.