Study Reveals Shared Proteins in Plant Communication Systems



Analysis of cryo-ET sorghum (A - E) and Arabidopsis (F - J) EVs.

Timothy Chaya, Aparajita Banerjee, Brian D Rutter, Deji Adekanye, Jean Ross, Guobin Hu, Roger W Innes, Jeffrey L Caplan, The extracellular vesicle proteomes of Sorghum bicolor and Arabidopsis thaliana are partially conserved, Plant Physiology, Volume 194, Issue 3, March 2024, Pages 1481–1497, https://doi.org/10.1093/plphys/kiad644

Scientific Achievement

While characterizing extracellular vesicles (EVs), plant organelles involved in intercellular communications, scientists found striking similarities in two different species.

Significance and Impact

These findings suggest EVs may have a shared function across different plant species. This could help scientists uncover more about plant defense against diseases.

Research Details

- Cryo-Electron Tomography (Cryo-ET) analysis of the sorghum EVs revealed a population of vesicles that had a similar morphological diversity to mammalian-derived vesicles.
- First Cryo-ET tomography work produced at the LBMS
- Some antibodies designed for Arabidopsis EV proteins could also bind to similar proteins in sorghum EVs.





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Work done in part at LBMS



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