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Zn2+ ions are concentrated in the Euphorbia peplus laticifer network

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Euphorbia peplus (petty spurge, Euphorbiaceae) is an emerging developmental model system for the study of laticifers, the cells that produce and contain plant latex. In other plant families, synchrotron X-ray fluorescence has been used to image laticifers in intact plant leaves, e.g. to study hyperaccumulator species. Previous synchrotron X-ray fluorescence studies on Euphorbia latex exuded from a cut plant showed that Zn2+ ions are concentrated in the latex. We wanted to show that this was true in vivo, i.e. that Zn2+ ions are concentrated in laticifers in an intact E. peplus leaf. We imaged both lyophilized and fresh leaf samples, and confirmed that Zn2+ was concentrated in laticifers in leaves but not cotyledons. This result improves our knowledge of Euphorbia laticifers and paves the way for future experiments in hormonally-treated plants and/or transcriptomically silenced plants.

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