

## SUPPLEMENTARY INFORMATION

### Distribution and chemical form of selenium in *Neptunia amplexicaulis* from Central Queensland, Australia

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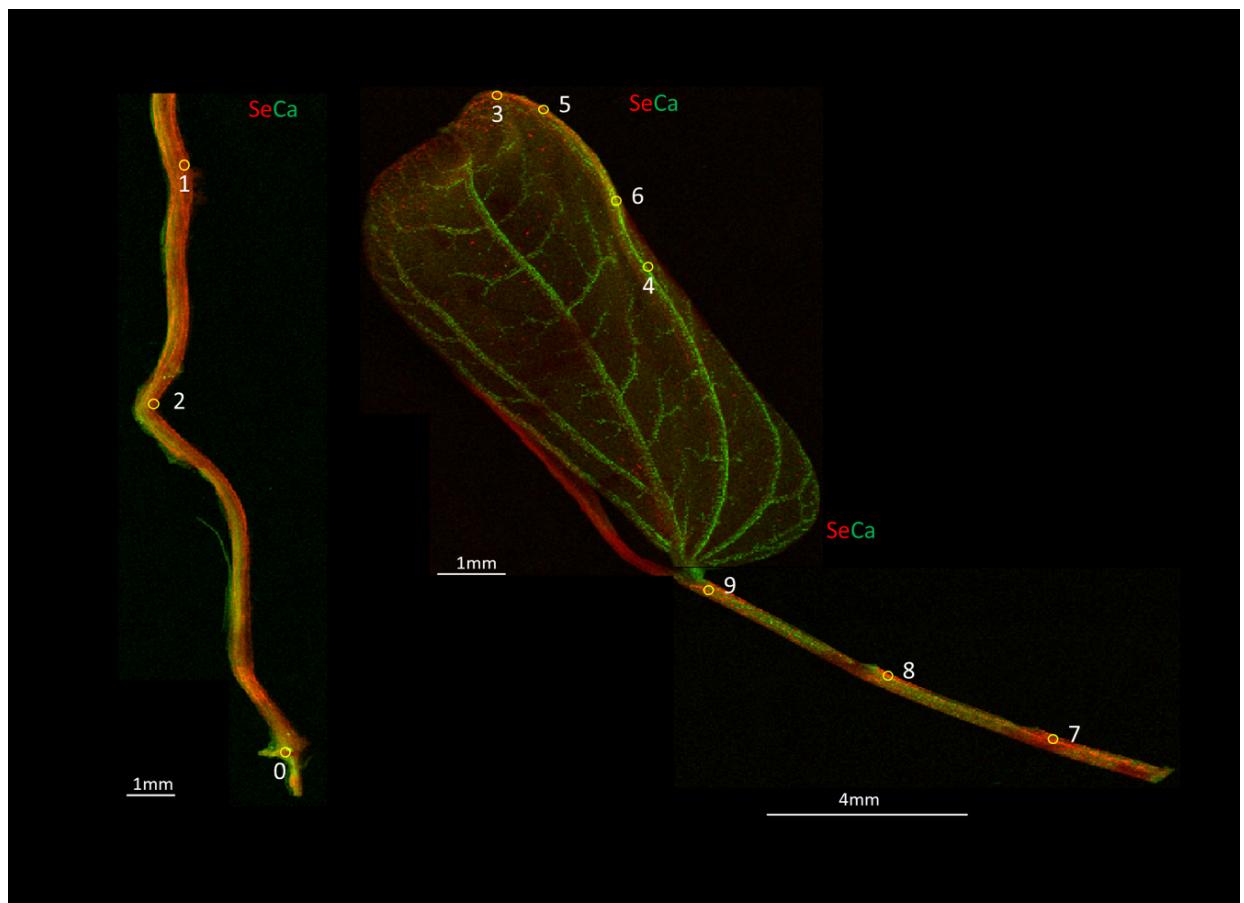
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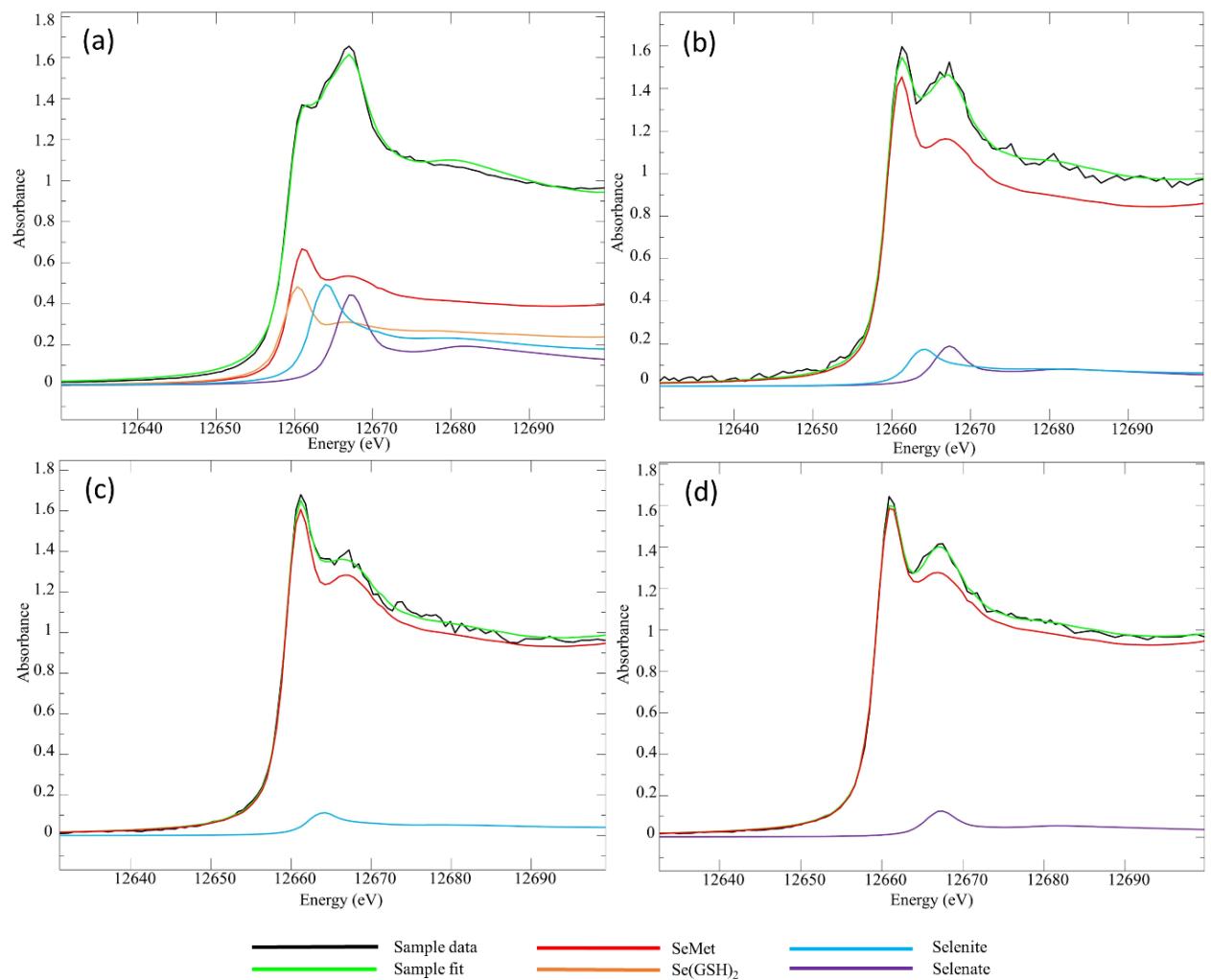
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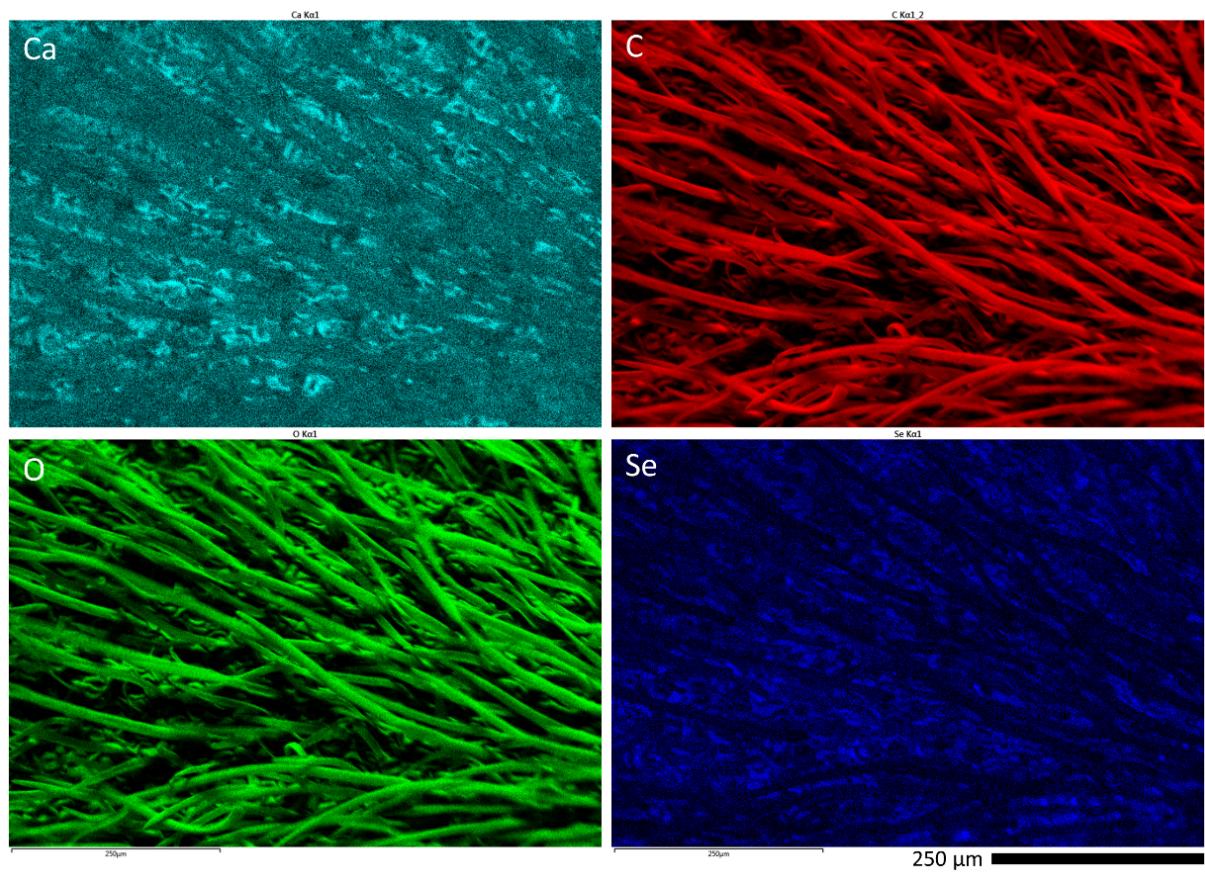
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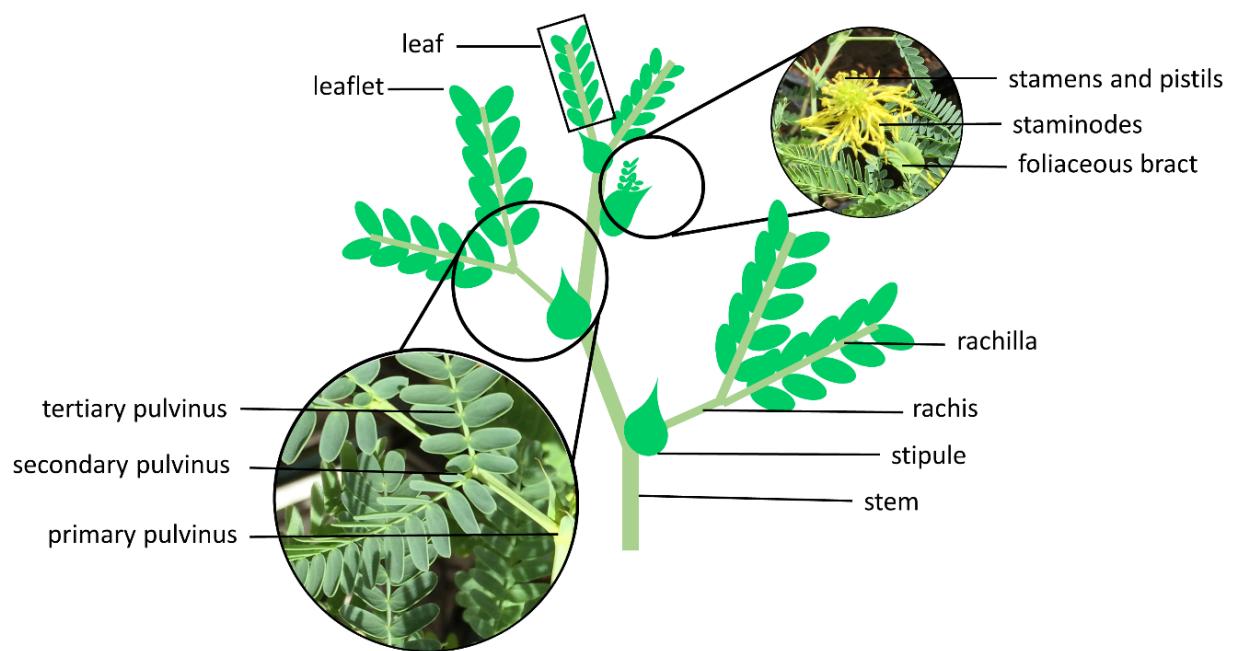
**Figure S1.**  $\mu$ XRF map of *N. amplexicaulis* root, leaflet and rachilla, grown on Se-spiked soils grown in the glasshouse. The data was acquired using a 13 keV incident beam, pixel size of  $20 \times 20 \mu\text{m}$  and a beam size of  $5 \times 5 \mu\text{m}$ . Selenium shown in red, calcium shown in green. Numbered circles indicate areas sampled for  $\mu$ XANES analysis.



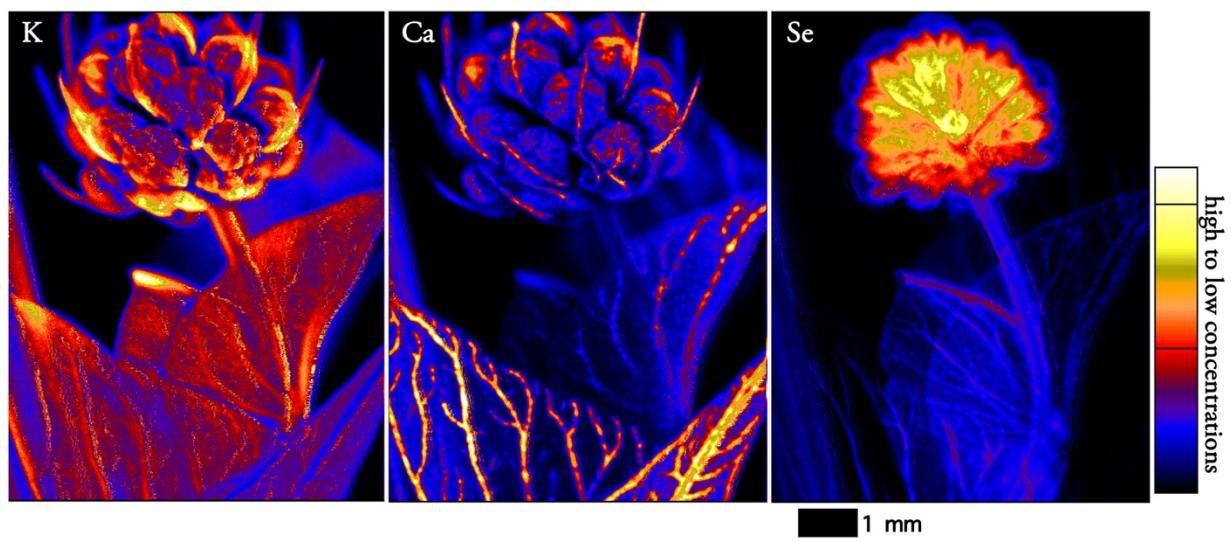
**Figure S2.** XAS spectra of representative sample points and relative fractions of model spectra for (a) root spot 0, (b) leaf edge spot 3, (c) leaf vein spot 6, and (d) rachilla spot 9. Sample data and fit in black and green, respectively. Models are SeMet (red), Se(GSH)<sub>2</sub> (orange), selenite (blue) and selenate (purple).



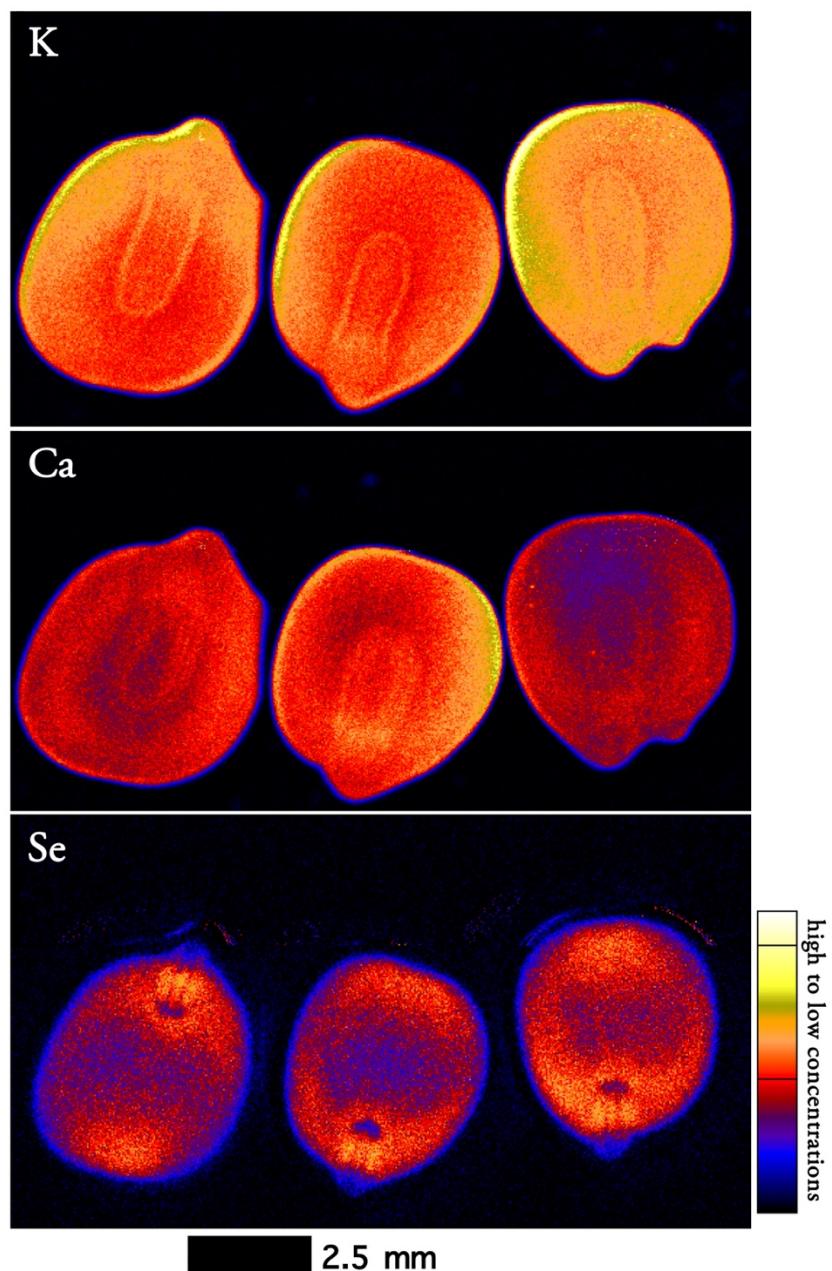
**Figure S3.** SEM-EDS images of *Neptunia amplexicaulis* trichomes from a young leaflet, showing Ca, C, O and Se. 180-fold magnification (2048 × 1408 pixels resolution image).



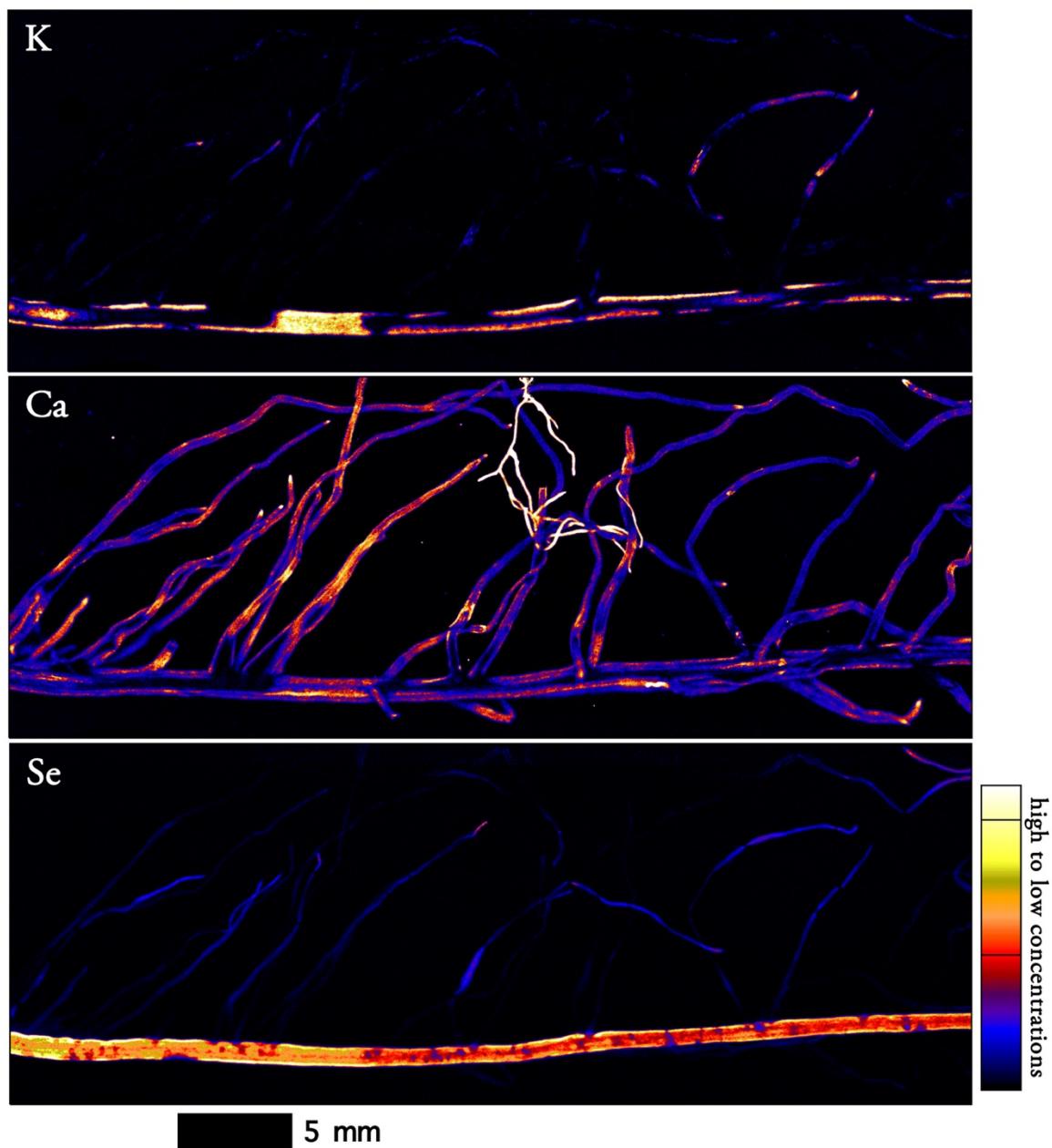
**Figure S4.** Generalised diagram of a *N. amplexicaulis* specimen including anatomical descriptions.



**Figure S5.** Laboratory-based  $\mu$ XRF elemental maps of potassium, calcium and selenium of a hydrated inflorescence bud of *Neptunia amplexicaulis*.



**Figure S6.** Laboratory-based  $\mu$ XRF elemental maps of potassium, calcium and selenium of dry seeds of *Neptunia amplexicaulis*.



**Figure S7.** Laboratory-based  $\mu$ XRF elemental maps of potassium, calcium and selenium of hydrated roots of *Neptunia amplexicaulis*.