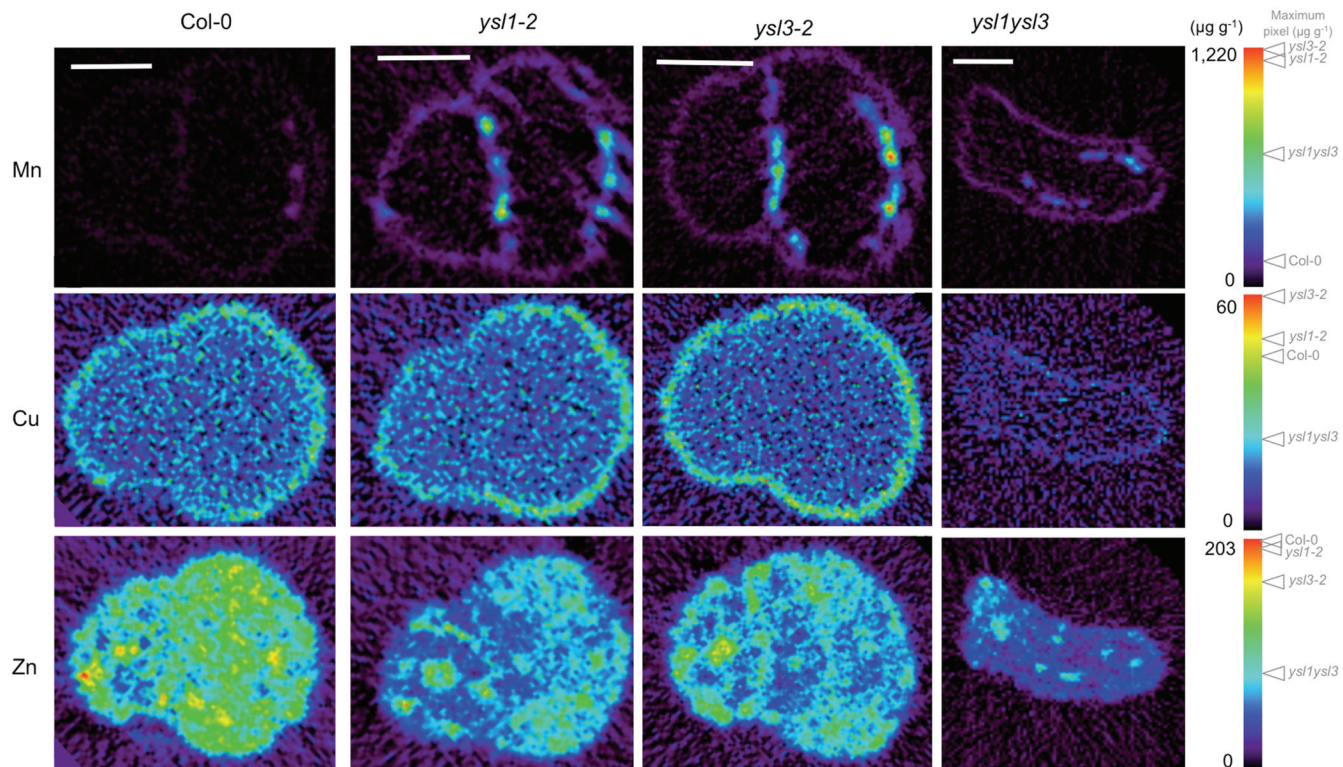


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AtYSL3	AVLSWGIMWPLIKGLKGDWFPSTLPENSMKSLNGYKVFISISLILGDGLY	
ZmYS1	AILSWGILWPLISKQKGEWYPANIPESMKSLEYGYKAFICIALIMGDGTY	
AtYSL1	AILSYGLMWPLLDKLGKSWFPDNLDEHNMKSIYGYKVFLSVALIILGDGLY	
AtYSL2	AILSWGIMWPLIARLKGEWFPATLKDNSMQGLNGYKVFICIALIILGDGLY	
AtYSL4	AILSWGFLWPFISQHAGDWYPADLKANDFKGLYGYKVFIASIIILGDGLY	
AtYSL5	GILSWGIMWPLIETKKGDWFPDNPSSSMHGLQAYKVFIAVAIILGDGLY	
AtYSL6	AILSWGILWPFVVSQHAGDWYPADLGSNDFKGLYGYKVFIATAIILGDGLY	
AtYSL7	AILSWGVMWPLIGAQKQKQWYAADLSSTSLHGLQGYRVFIAMILGDGLY	
AtYSL8	GILSWGIMWPLIETRKGDWFPSPNVDSSSMNGLQAYKVFIAVATILGDGLY	
OsYSL1	SISSSGFIWPAALQAKQGEWYTDSP-TSFKGINGYKVPMGVSMVLGDCLF	
OsYSL2	AILSWGIMWPLISIQKQKQWYPGNVPESSMTSLFGYKSFMCVALIMGDGLY	
OsYSL3	AILSWGFLYPFLETKRQWYQTDSP-TSLNGQNGYKVFISVTLIITDGM	
OsYSL4	AILSWGFLYPYLETKHGEWYQTDSP-SNLDGLNGYKVFISVTLIVTDGLI	
OsYSL5	SVISWGFLWPFIAKQAGDWYPDNLSNTDFRGLYGYKVFIASVILGDGLY	
OsYSL6	AILSWGFLWPYISTKAGDWYPANLGSNDFKGLYGYKVFISVSVILGDGLY	
OsYSL7	TIISCGVIWPHYESKEGIWYPSNLGPNSLNGIRGYKVFISGLSMIMADCLF	
OsYSL8	SVVSWGIMWPHYESKKGWYDAGLPKSSLHGLNGYQVFISIAMIVGDGLF	
OsYSL9	AILSWGVMWPLISDLKGDWYSADIPESSMKSLEQYKAFICVALIILGDGLY	
OsYSL10	GVMSWGIMWPLIEHKKGDWYPADLKPSSLRGIVGYRVFISISLILGDGLY	
OsYSL11	GILSWGIMWPLISKKKGSWYPETLPESSLLGLQAYKVFITIAVILGDGLY	
OsYSL12	GILSWGIMWPLIRNKKGSWYAASLSETSLHGLQGYRVFISIALIILGDGLY	
OsYSL13	GILSWGIMWPLIAKKRGDWFSADLPDGS LHGMQGYRVFIATAIILGDGLY	
OsYSL14	GILSWGVMWPLIAKKKGSWYPADISDNLHGLQAYRVFISIALIILGDGLY	
OsYSL15	AVISWGIMWPLISKHKGDWYPANIPESMSTSLYGYKSFICIALIMGDGLY	
OsYSL16	AILSWGIMWPLIGKQKGNWYSAKASESSMGLFGYKSFICIALLVGDGFY	
OsYSL17	SIVSWGILWPHYETKAGRWFPENLDANDLGGIMGYRVFVGVSMILADGLF	
OsYSL18	SIISWGIMRPYIRSKRGIWYDADLQETNLKSFSGYKVFCAIAMILGDGIF	
	: * * . : * : * * : . : . . * : : : * :	

Supplemental Figure 1. The sequence of the protein encoded by the AtYSL3 cDNA. Residues 289-338 of the AtYSL3 protein are shown. One change relative to the sequence of Col0 At5g53550 was found in the cDNA that resulted in the change of a lysine residue to an arginine residue (shown at top). For comparison, the sequences of all other Arabidopsis and rice YSLs are shown. At bottom, "*" indicates perfect conservation; ":" indicates that conserved substitutions are observed; "." indicates that semi-conserved substitutions are observed.



Supplemental Figure 2. Synchrotron X-ray Fluorescence Computed Microtomography showing the distribution and abundance (in $\mu\text{g g}^{-1}$) of Mn, Cu and Zn. Tomograms (virtual cross sections) were collected via SXRF computed microtomography from intact, dry *Arabidopsis* seed. All seeds are oriented with the radicle at left and cotyledons at right. Scale bars are 100 μm .