Table S1 Development of apoplastic barriers in exo- and endodermis of roots of two *S. caprea* isolates (F20 and KH21).

The values are expressed as distances from the root tip (in mm) where barrier formation was first visible. Data are means ± SD from six different biological replicates for each treatment. (C) standard nutrient solution, (Cd) supplemented with 0.5 mg l^{-1} Cd, (Zn) supplemented with 5 mg l^{-1} Zn, (Cd+Zn) supplemented with both heavy metals. Different letters indicate significant differences between treatments.

			Treatment	Distance from the root tip (mm)	SD
F20	**Casparian band**	**exodermis**	**C**	3.42	0.95 a
			Cd	2.38	0.76 b
			Zn	1.95	0,62 bc
			Cd+Zn	1.84	0.64 bcd
		endodermis	**C**	2.53	0.87 a
			Cd	1.68	0.69 ab
			Zn	1.16	0.36 bc
			Cd+Zn	1.47	0.05 bcd
	Suberin lamellae	**exodermis**	**C**	15.62	3.08 a
			Cd	9.59	2.27 b
			Zn	7.31	0.86 bc
			Cd+Zn	10.26	2.43 cd
		endodermis	**C**	30.07	4.86 a
			Cd	13.03	4.01 b
			Zn	14.1	2.39 bc
			Cd+Zn	12.98	1.76 bcd
KH21	**Casparian band**	**exodermis**	**C**	1.27	0.53 a
			Cd	1.32	0.46 ab
			Zn	1.5	0.44 abc
			Cd+Zn	1.87	0.4 abcd
		endodermis	**C**	1.8	0.64 a
			Cd	1.86	0.36 ab
			Zn	2.13	0.43 abc
			Cd+Zn	1.96	0.73 abcd
	Suberin lamellae	**exodermis**	**C**	9.71	3.57 a
			Cd	10.39	1.89 ab
			Zn	11.1	2.84 c
			Cd+Zn	14.96	1.38 abcd
		endodermis	**C**	15.37	3.7 a
			Cd	26.17	10.12 ab
			Zn	29.37	6.37 bc
			Cd+Zn	24.9	4.79 bcd

Table S2 Element distribution of *S. caprea* roots according to the EDX analysis.

The values correspond to weight% of KH21 and F20 clones cultivated for 14 weeks in perlite and watered with a standard nutrient solution supplemented with 0.5 mg L^{-1} Cd or in 5 mg L^{-1} Zn or both metals Cd+Zn. Three different areas of the cross-section of the basal part of secondary thickened roots were analyzed (bark, phloem and xylem). Data are means ±SD (n = 30). Small letters indicate significant differences of element distribution between the root areas. Capital letters indicate significant differences of element distribution between the willow isolates in the same treatment.

			Element distribution (weight%)							
Isolate	**Treatment**	**Tissue**	**Zn**	**Cd**	**Ca**	**K**	**S**	**Si**	**Mg**	**Na**
KH21	**Zn**	Bark	0.479±0.49 a, A	0.073±0.04 a, A	2.055±1.50 a, A	0.597±0.40 a, A	0.405±0.20 a, A	0.261±0.18 a, A	0.330±0.11 a, A	0.280±0.04 a, A
		Phloem	0.129±0.04 b, A	0.093±0.03 b, A	0.970±0.49 b, A	0.942±0.33 b, A	0.466±0.14 a, A	0.149±0.13 b, A	0.244±0.08 b, A	0.167±0.06 b, A
		Xylem	0.117±0.03 b, A	0.073±0.03 a, A	0.244±0.09 c, A	0.600±0.18 a, A	0.318±0.14 b, A	0.054±0.03 c, A	0.144±0.05 c, A	0.099±0.03 c, A
	Cd	Bark	0.079±0.04 a, A	0.090±0.06 a, A	1.265±0.84 a, A	1.187±1.57 a, A	0.497±0.20 a, A	0.263±0.17 a, A	0.342±0.08 a, A	0.264±0.05 a, A
		Phloem	0.082±0.04 a, A	0.098±0.04 a, A	1.207±0.84 b, A	1.916±0.85 b, A	0.812±0.27 b, A	0.128±0.07 b, A	0.352±0.11 a, A	0.307±0.09 b, A
		Xylem	0.102±0.04 b, A	0.123±0.06 b, A	0.426±0.26 c, A	1.538±0.96 ab, A	0.461±0.33 a, A	0.154±0.11 b, A	0.277±0.13 b, A	0.266±0.10 ab, A
	Cd+Zn	Bark	0.237±0.16 a, A	0.062±0.06 a, A	1.185±0.65 a, A	0.772±0.61 a, A	0.456±0.26 a, A	0.431±0.40 a, A	0.355±0.13 a, A	0.360±0.07 a, A
		Phloem	0.142±0.04 b, A	0.066±0.02 a, A	2.280±0.62 b, A	1.116±0.28 b, A	0.530±0.12 ab, A	0.255±0.17 b, A	0.331±0.07 a, A	0.262±0.06 b, A
		Xylem	0.113±0.03 c, A	0.071±0.03 a, A	0.388±0.13 c, A	0.907±0.18 a, A	0.361±0.12 ac, A	0.356±0.22 ab, A	0.297±0.01 a, A	0.246±0.11 bc, A

			Element distribution (weight%)							
Isolate	**Treatment**	**Tissue**	**Zn**	**Cd**	**Ca**	**K**	**S**	**Si**	**Mg**	**Na**
F20	**Zn**	Bark	0.282±0.17 a, B	0.067±0.04 a, A	1.423±0.78 a, B	0.706±0.34 a, A	0.400±0.16 a, A	0.694±0.50 a, B	0.391±0.15 a, A	0.337±0.07 a, B
		Phloem	0.155±0.08 b, A	0.094±0.04 b, A	0.952±0.63 b, A	1.465±0.77 b, B	0.647±0.40 b, B	0.285±0.33 b, B	0.393±0.23 a, B	0.292±0.19 a, B
		Xylem	0.141±0.05 b, B	0.091±0.04 b, A	0.460±0.30 c, B	0.982±0.51 c, B	0.541±0.34 c, B	0.483±0.35 a, B	0.458±0.23 a, B	0.317±0.15 a, B
	Cd	Bark	0.083±0.04 a, A	0.073±0.04 a, A	2.246±1.64 a, B	1.049±0.63 a, A	0.483±0.23 a, A	0.605±0.53 a, B	0.463±0.12 a, B	0.239±0.06 a, A
		Phloem	0.094±0.05 b, A	0.111±0.07 b, A	2.108±1.00 b, B	2.290±0.99 b, A	0.640±0.26 b, A	0.318±0.30 b, B	0.362±0.11 b, A	0.225±0.05 ab, A
		Xylem	0.108±0.07 b, A	0.123±0.10 b, A	0.503±0.29 c, A	1.257±0.41 a, A	0.363±0.16 c, A	0.497±0.50 ab, B	0.350±0.11 b, B	0.198±0.07 b, B
	Cd+Zn	Bark	0.500±0.46 a, B	0.208±0.22 a, B	4.760±5.62 a, B	1.935±1.77 a, B	0.651±0.38 a, B	0.353±0.20 a, A	0.343±0.10 a, A	0.341±0.08 a, A
		Phloem	0.109±0.05 b, B	0.135±0.08 a, B	1.002±0.72 b, B	2.285±1.38 a, B	0.528±0.29 a, A	0.203±0.13 b, A	0.277±0.06 b, B	0.298±0.06 b, B
		Xylem	0.125±0.06 b, A	0.144±0.13 a, B	0.245±0.11 c, B	0.799±0.36 b, A	0.200±0.08 b, B	0.189±0.10 b, B	0.183±0.07 c, B	0.182±0.05 c, B

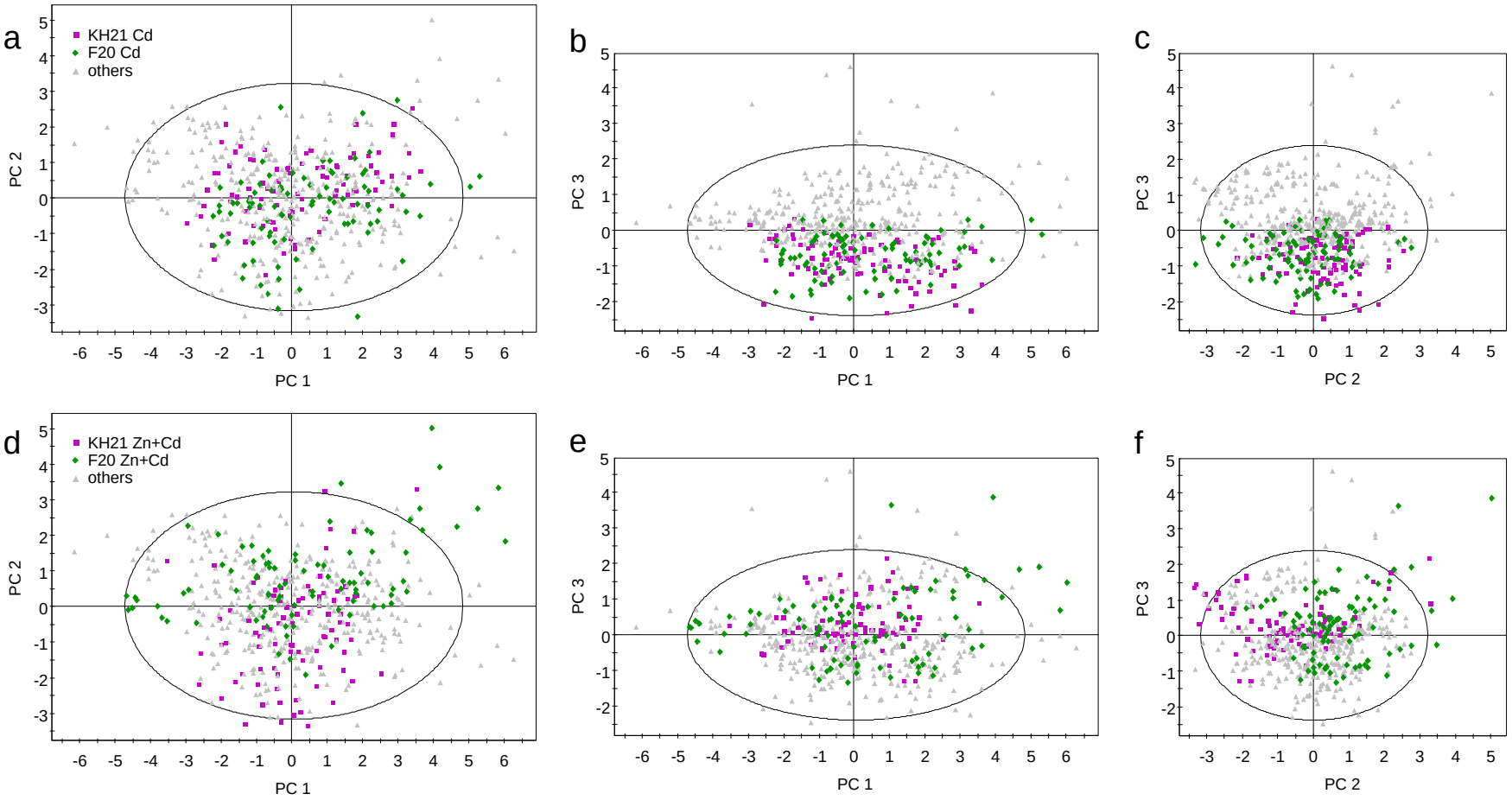

Figure S1 Principle component analysis (PCA) of the element distribution data. Color coded are the isolates in the Cd (a-c) and Cd+Zn (d-f) treatment. The scatter plots illustrate the effects of the three significant PCs being the coordinates of PC1 and PC2 in a,d of PC1 and PC3 in b,e and of PC2 and PC3 in (c,f).

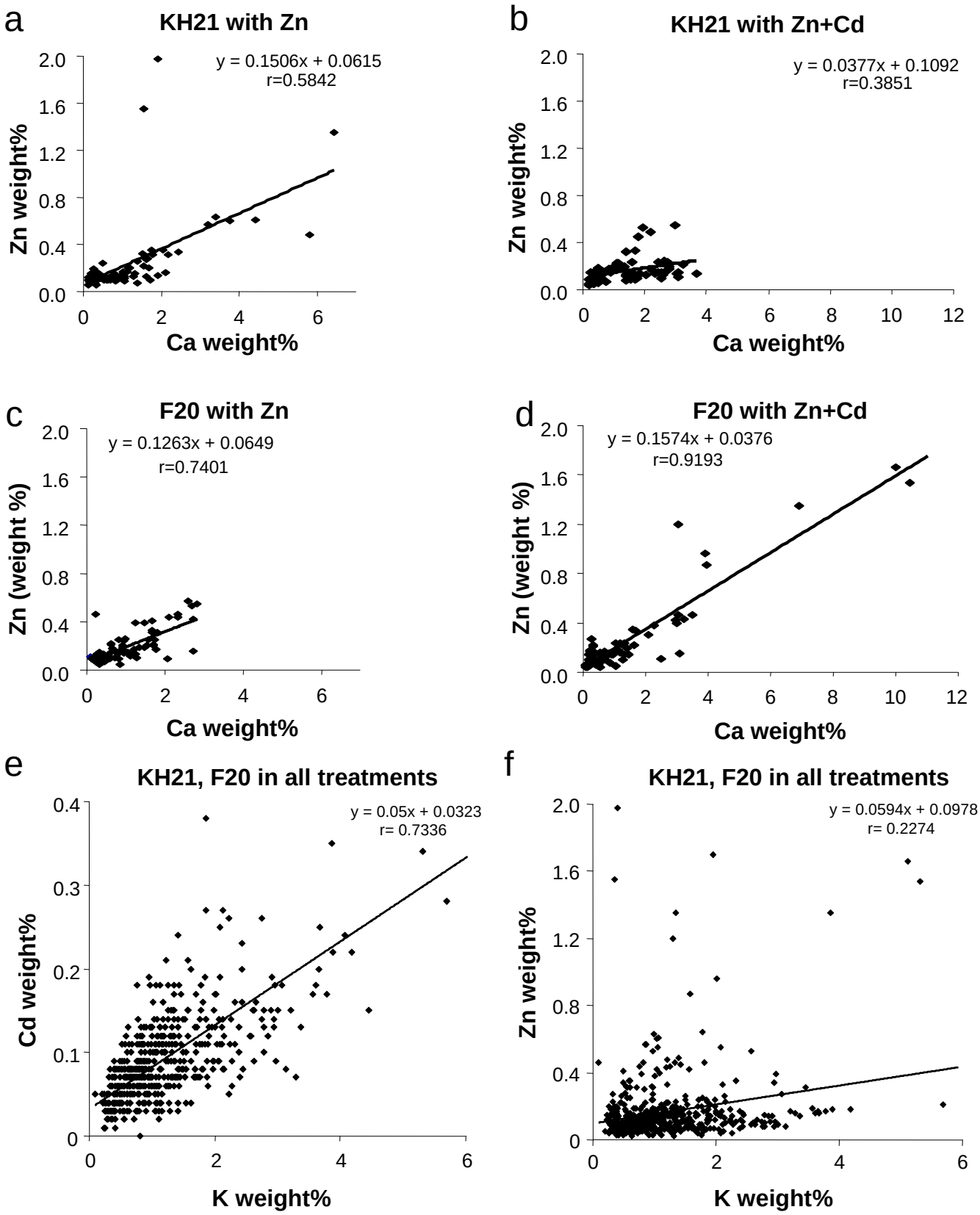

Figure S2 Relationships between the level of Ca, Zn, Cd and K.

Pearson's correlations between the level of Ca and Zn in KH21 (a,b) and in F20 (c,d) treated with either Zn (a,c) or Zn+Cd (b,d).

Pearson's correlations between the level of K and Cd (e) and K and Zn (f) for both isolates and all treatments. All values are weight%. Twelve roots of six biological replicates of each isolate were evaluated.