SUPPLEMENTARY INFORMATION

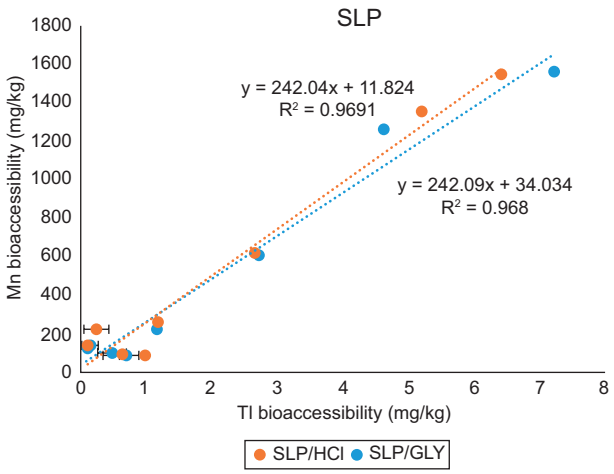

Fig. SI. Comparison of thallium and manganese bioaccessibility (BA) from both tests applied to the samples of San Luis Potosí (SLP). Error bars indicate standard error

TABLE SI. LOCATION AND DESCRIPTION OF SELECTED SAMPLES

Sample	Coordinates East	UTM North	Description
			Soils from the metallurgical site.
SLP01	290700	2453698	Surface soil (0-5 cm) contaminated by metallurgical waste. From Cu and As plant.
SLP02	290751	2452152	Surface soil (0-5 cm) contaminated by metallurgical waste. From Cu plant.
SLP03	291052	2451852	Surface soil (0-5 cm) contaminated by metallurgical waste. From Cu plant.
SLP04	291351	2452250	Surface soil (0-5 cm) contaminated by metallurgical waste. From As plant.
SLP05	290652	2451450	Surface soil (0-5 cm) contaminated by metallurgical waste. From Cu plant.
SLP06	290548	2451952	Surface soil (0-5 cm) contaminated by alkaline metallurgical waste. From Cu plant.
SLP07	290749	2451749	Surface soil (0-5 cm) contaminated by metallurgical waste. From Cu plant.
SLP08	291352	2451851	Surface soil (0-5 cm) contaminated by metallurgical waste. From As plant.
SLP09	290450	2451650	Metallurgical waste coming from smelting ashes.
			Tailings impoundment "La Concha". Homogeneous profile 1 and 2. Brown (oxidized) tailings.
TXP1a	432884	2050175	0-5 cm
TXP1b	*	*	5-50 cm
TXP1c	*	*	50-100 cm
TXP2a	432886	2050012	0-5 cm
TXP2b	*	*	5-50 cm
TXP2c	*	*	50-100 cm
			Tailings impoundment "El Fraile". Heterogeneous profile 3 and 4.
TXP3a	432807	2048351	0-30 cm. Filling material
TXP3b	*	*	30-80 cm. Tailings yellow apaque
TXP3c	*	*	80-100 cm. Tailings grays
TXP4a	432876	2048455	0-40 cm. Filling material
TXP4b	*	*	40-180 cm. Tailings yellow opaque
TXP4c	*	*	180-200 cm. Tailings grays
			Tailings impoundment "Foster". Homogeneous profile 5 and 6. Gray (fresh-reduced) tailings.
TXP5a	436966	2048702	0-5 cm
TXP5b	*	*	5-50 cm
TXP5c	*	*	50-100 cm
TXP6a	436987	2048102	0-5 cm
TXP6b	*	*	5-50 cm
TXP6c	*	*	50-100 cm
			Soils samples near "La Concha" Tailings impoundment.
TXSC1	432929	2050013	Sample soil near a river. 0-5 cm
TXSC2	432975	2050103	Sample soil near a river. 0-5 cm
			Soils samples near "El Fraile" Tailings impoundment.
TXSF1	433327	2048463	Sample soil near a river. 0-5 cm. There is a lot of vegetation.
TXSF2	433379	2048371	Sample soil near a river. 0-5 cm. There is a lot of vegetation.

*The coordinates given correspond to profile

TABLE SII. MINERALOGICAL COMPOSITION OF THE SAMPLES (BASED ON THE SEMI-QUANTITATIVE X RAY DIFFRACTION ANALYSIS) COLLECTED FROM SAN LUIS POTOSÍ (SLP) AND TAXCO (TX)

Sample	Identified mineral phases and semi-quantitative analysis																
	Ars	Ang	Cal	Dol	Fsp	Gth	Gp	Hem	Jrs	Mca	Mim	PI	Px	Py	Qz	Smi	Zeo
SLP01	I	+			++++	+		+		+		++++			++++		
SLP02	++	I			++++	I		+		+		++++			++++		
SLP03	+	+			++++	+		I	++	+		+++			++++		
SLP04	I	++			++++	+		+		+		++++		+	++++		
SLP05		+	+		++++	+		+		+++		+++			++++		
SLP06	+++	++	++		+++	I		+		+		++++		+	++++		
SLP07	++	+			++++	+		I	+	+		++++			++++		
SLP08	+	+	++		++++	+		+				++++		+	++++		
SLP09	++++	+++			I	+	+++	+				++++			++++		+++++
TXP1a		+	+++	++	++++	+			++		+				++++	++	
TXP1b		+	+++	+++	+++	+			++		+				++++	++	
TXP1c			++++	++	+++	+			++		+				++++	++	
TXP2a			++++	++	++++	+	++		++		I				++++	++	
TXP2b		+	++++	++	++++	+	I		++		+				++++	++	
TXP2c			++++	++	++++	+	I		++		+				++++	++	
TXP3a			++++		I		I		I	+++		+++		I	++++		
TXP3b			I		++		++++		++	+		I		+	++++		
TXP3c		I	I		++		++++		+	+		I		+	++++		
TXP4a		I	+++		I		++		I	++++		+++			++++		
TXP4b			I		+++		I		++	++					+++++		
TXP4c			+		++		++		I	++					+++++		
TXP5a			++++				+			++	I		+++	+	++++		
TXP5b			++++				+			++	I		+++	+	++++		
TXP5c			++++				I			++	++		+++	++	++++		
TXP6a			+++				+			++			+++	+++	++++		
TXP6b			++++				I			++			+++	+++	++++		
TXP6c			++++				I			++			+++	+++	++++		
TXSC1		+	++	++								++			+++++		
TXSC2		+	+							++		++			+++++		
TXSF1		+			++++		I		++	++					++++		
TXSF2		+			++++		+		+	++					++++		

+++++ major component (>50%); ++++ (20–50%); +++ (10–20%); ++ (5–10%); + (1–5%); I (identifiable traces).
Ars: Arsenolite (As_2O_3); Ang: Anglesite ($PbSO_4$); Cal: calcite ($Ca(CO_3)_2$); Dol: Dolomite ($CaMg(CO_3)_2$); Fsp: feldspar ($KAlSi_3O_8$ (orthoclase) – $NaAlSi_3O_8$ (Albite) – $CaAl_2Si_2O_8$); Gth: goethite [FeO(OH)]; Gp: Gypsum ($CaSO_4{}^*2H_2O$); Hem: hematite (Fe_2O_3); Jrs: jarosite ($KFe_3{}^{+3}(OH)_6(SO_4)_2$); Mca: Mica (Al $Si_3O_{10}A_{l2}$ $(Mg.Fe)_3(OH)_2K$); Mim: Mimetite ($Pb_5(AsO_4)_3Cl$); Po: pyrrhotite; Py: pyrite (FeS2); PI: plagioclase [$(Na,Ca)(Si,Al)_3O_8$]; Px: Pyroxene ($MgCaSi_2O_6$); Qz: quartz (SiO_2); Smi: Smithsonite ($ZnCO_3$); Zeo: Zeolite ($(Ca,Na)_2$-$3Al_3(Al,Si)_2Si_{13}O_{36}{\bullet}12H_2O$). To discriminate between illite and mica, the peaks appearing at approximately 10 A^o were analyzed and assigned to mica when narrow, and to illite when broad

TABLE SIII. BIOACCESSIBILITY (BA) OF Mn IN THE SAN LUIS POTOSÍ (SLP) AREA

Mn bioaccessible content (mg/kg)				
Samples	Concentrations extracted in hydrochloric acid + glycine	%	Concentrations extracted in hydrochloric acid	%
SLP01	222	41.1	139	25.8
SLP02	89.6	17.2	83.6	16.1
SLP03	140	33.4	129	30.6
SLP04	260	19.4	230	17.1
SLP05	91.7	15.3	99.0	16.5
SLP06	1.54×10^3	29.7	1.56×10^3	29.9
SLP07	615	34.1	608	33.8
SLP08	1.35×10^3	96.6	1.27×10^3	90.1
SLP09	141	53.8	132	50.8