Disruption of selenium transport and function is a major contributor to mercury toxicity in zebrafish larvae

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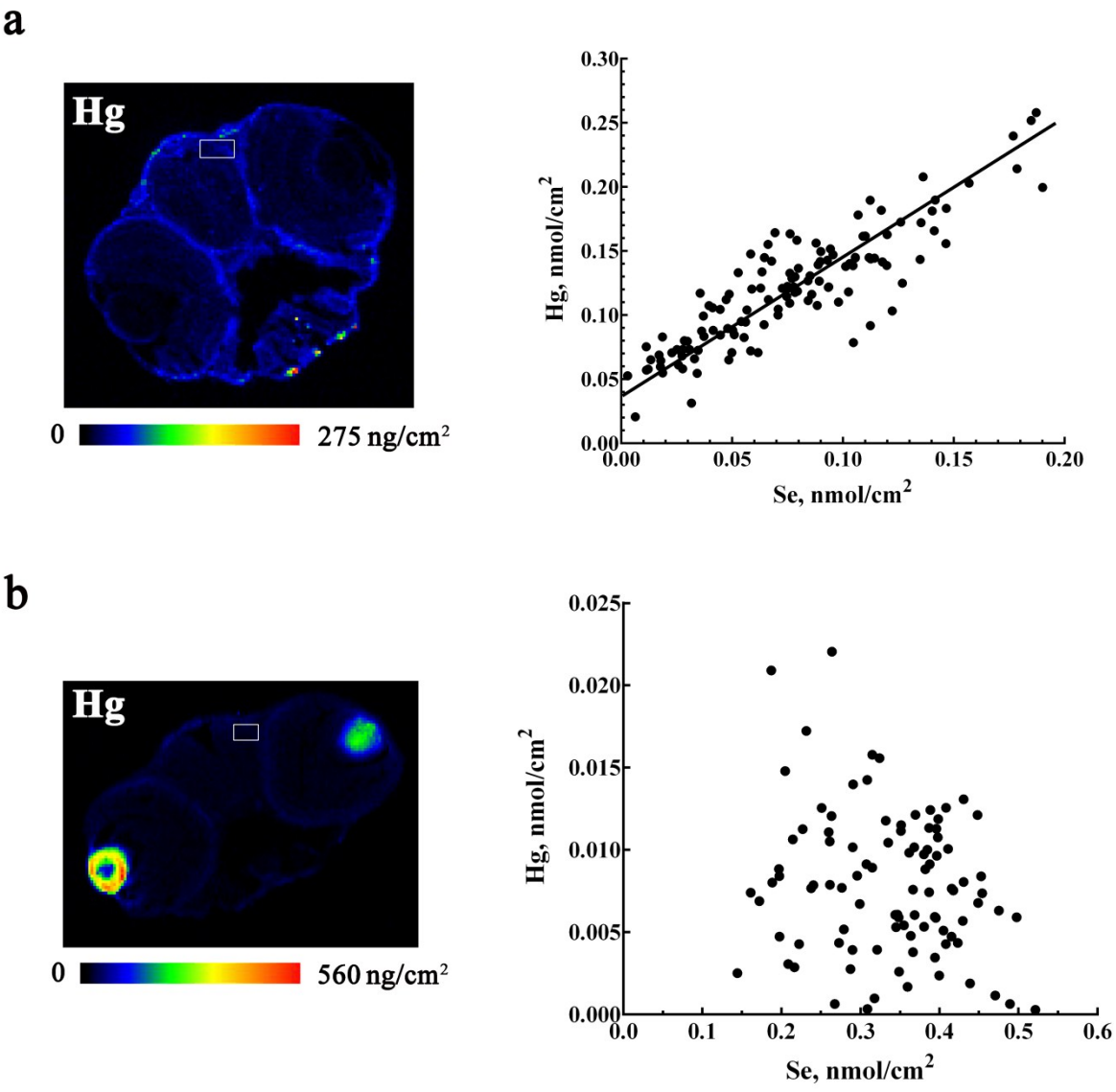

Figure 1S. Hg vs. Se correlation plots for pixels from the region of brain including brain-blood barrier. XFI (insets) of zebrafish larvae treated with (a) L-selenomethionine at 3 dpf followed by mercuric chloride at 4 dpf (treatment pictured on Fig. 2E) and (b) L-selenomethionine at 3 dpf followed by methylmercury at 4 dpf (treatment pictured on Fig. 2F) together with corresponding XFI used for plotting. Plot a shows significant correlation with R^2 0.77 for the sample treated with selenomethionine and inorganic mercury (a), and an absence of correlation (R^2 0.12) in the sample treated with selenomethionine and organic mercury (b).

Table S1. Significant differences between Se treatments.

Quantity	Comparison of Se treatments	No Hg	$HgCl_2$	MeHgCl
Hg in brain	3 dpf Se vs no Se	ns	ns	ns
Hg in brain	5 dpf Se vs no Se	↓**	ns	ns
Se in brain	3 dpf Se vs no Se	ns	↑*	↑**
Se in brain	5 dpf Se vs no Se	↑**	ns	ns
Hg in RPE	3 dpf Se vs no Se	ns	ns	ns
Hg in RPE	5 dpf Se vs no Se	ns	ns	↑*
Se in RPE	3 dpf Se vs no Se	↑*	↑****	↑****
Se in RPE	5 dpf Se vs no Se	↑****	ns	ns
T4	3 dpf Se vs no Se	↓**	↓**	ns
T4	5 dpf Se vs no Se	ns	ns	↓**
T3	3 dpf Se vs no Se	↓****	↓*	↓****
T3	5 dpf Se vs no Se	↓****	ns	↓****

Table S2. Significant differences between Hg treatments.

Quantity	Comparison of Hg treatments	No Se	+3 dpf Se	+5 dpf Se
Hg in brain	$HgCl_2$ vs no Hg	ns	↑**	ns
Hg in brain	MeHgCl vs no Hg	↑***	↑**	↑***
Se in brain	$HgCl_2$ vs no Hg	↓*	ns	↓***
Se in brain	MeHgCl vs no Hg	↓*	ns	↓**
Hg in RPE	$HgCl_2$ vs no Hg	ns	↑**	ns
Hg in RPE	MeHgCl vs no Hg	↑***	↑***	↑****
Se in RPE	$HgCl_2$ vs no Hg	ns	↑****	↓****
Se in RPE	MeHgCl vs no Hg	ns	↑****	↓****
T4	$HgCl_2$ vs no Hg	ns	ns	ns
T4	MeHgCl vs no Hg	↑*	↑***	ns
T3	$HgCl_2$ vs no Hg	↓****	ns	↓**
T3	MeHgCl vs no Hg	↑****	↑**	↓*

Statistically significant differences between stated treatments are labelled with asterisks: one asterisk means P≤0.05, two – P≤0.01, three – P≤0.001, four – P≤0.0001. ns, not significant. Arrows indicate ↑increase or ↓decrease relative to no treatment.