Supplementary Information

No measurable "cleaning" of polychlorinated biphenyls from Rainbow Trout in a 9-week depuration study with dietary exposure to 40% polyethylene microspheres

CHRISTOPH DANIEL RUMMEL[§], MARGARETHA ADOLFSSON-ERICI[§], ANNIKA JAHNKE[¥]

& MATTHEW MACLEOD[§]*

[§]Department of Environmental Science and Analytical Chemistry (ACES), Stockholm University, Svante Arrhenius väg 8, SE-114 18 Stockholm, Sweden

[¥]Department of Cell Toxicology, Helmholtz Centre for Environmental Research – UFZ, Permoserstraße 15, DE-04318 Leipzig, Germany

*corresponding author: Matthew MacLeod; matthew.macleod@aces.su.se

List of figures

List of tables

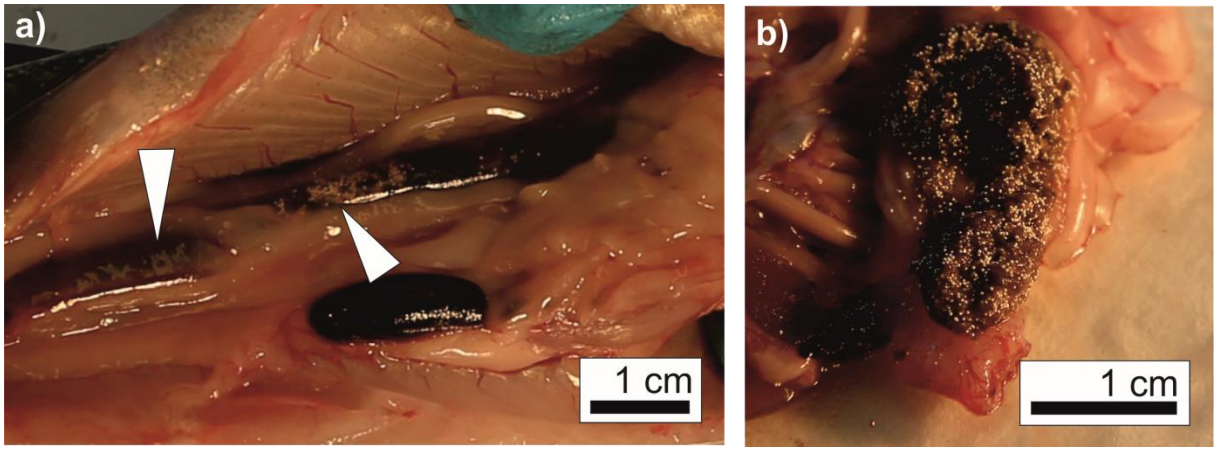

Figure S 1: Plastic-containing food pellets during gut passage in rainbow trout. **a:** The cavity was opend and the translucent intestine filled with white PE microspheres (arrow heads) became visible. **b:** Stomach detached from the pharynx the stomach. White PE microspheres become easily distinguishable from the brownish fish food bulk.

Table S 1: The mean of the total lengths, total wet weights, the gutted weights and the condition factor *K* for each experimental group and sampling day. There is no data available on sampling day zero (n.d.) exept the total weight

Sampling time [days]	**Test group**	**Mean total length ± SD [cm]**	**Total weight ± SD [g]**	**Total gutted weight ± SD [g]**	**Condition factor *K*** $(K = \frac{W_{gut}}{L^3} * 100)$
0	Control	n.d.	77.6 ± 40.0	n.d.	n.d.
	Plastic treatment	n.d.	87.0 ± 11.5	n.d.	n.d.
21	Control	20 ± 4	93.2 ± 48.7	82.9 ± 43.8	0.97 ± 0.15
	Plastic treatment	21 ± 2	103.6 ± 17.3	89.9 ± 16.1	1.04 ± 0.08
42	Control	20 ± 1	88.4 ± 6.0	79.5 ± 4.8	1.08 ± 0.15
	Plastic treatment	20 ± 2	86.2 ± 12.6	76.3 ± 13.0	1.03 ± 0.10
63	Control	21 ± 2	111.0 ± 31.4	98.0 ± 24.4	1.05 ± 0.02
	Plastic treatment	22 ± 2	136.2 ± 43.1	117.3 ± 33.7	1.09 ± 0.10

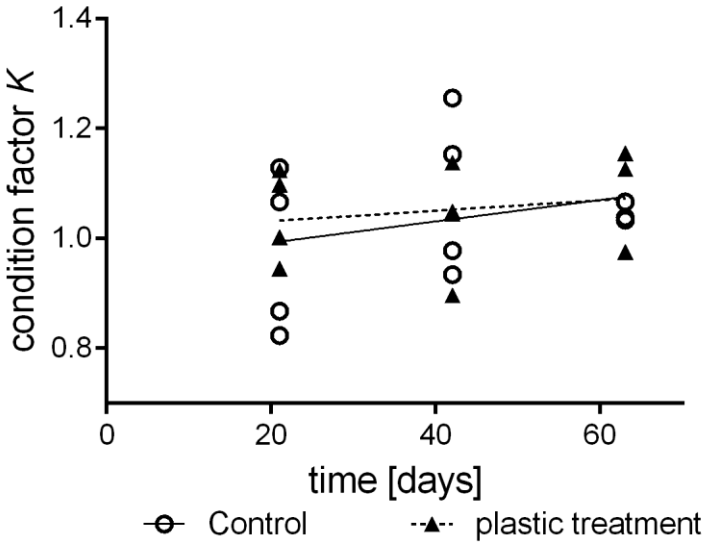

Figure S 2: The mean condition factor of the control and the treatment groups over time. Over the course of the experiment no difference in the condition factor between fish that were treated with plastic-containing feed and the control could be observed. There is no data available on sampling day zero (n.d.).

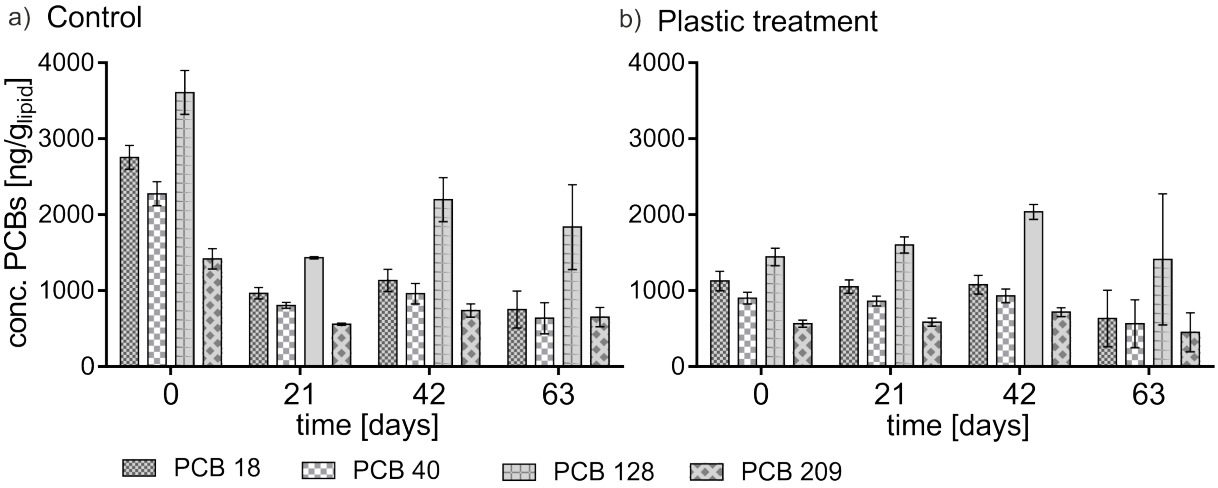

Figure S 3: Lipid-normalized concentrations for PCB 18, PCB 40, PCB 128 and PCB 209 over time for the control (a) and the plastic treatment (b) group. Note the larger standard deviations on sampling day 63 due to analyses of individual fish as opposed to replicate analysis of pooled fish (i.e. experimental replicates instead of technical ones)

Table S 2: Depuration rates, log octanol-/water partition coefficient (log K_{ow}), the upper and lower 95 % confidence intervals of the slopes, elimination rate constants k_2 and the corresponding calculated half-times ($t_{1/2}$) with lower and upper 95 % confidence half-time for each tested PCB congener.

PCB congener	Log K_{ow}	Test group	Lower 95 % confidence interval $k_{2\,low}$ [d^{-1}]	Regression coefficient (elimination rate constant k_2) [d^{-1}]	Upper 95 % confidence interval $k_{2\,up}$ [d^{-1}]	Calculated lower 95 % confidence half-time $t_{1/2} = \frac{\ln(2)}{k_{2\,low}}$ [days]	calculated half-time $t_{1/2} = \frac{\ln(2)}{k_2}$ [days]	Calculated upper 95 % confidence half-time $t_{1/2} = \frac{\ln(2)}{k_{2\,up}}$ [days]
PCB 18	5.67	Control	-0.0509	-0.0178	0.0153	14	39	∞
		Plastic treatment	-0.0258	-0,0081	0.0096	27	86	∞
PCB 40	6.11	Control	-0.0504	-0.0173	0.0158	14	40	∞
		Plastic treatment	-0.0243	-0.0063	0.0116	29	110	∞
PCB 128	6.99	Control	-0.0448	-0.0076	0.0296	16	92	∞
		Plastic treatment	-0.0179	0.0008	0.0195	39	866	∞
PCB 209	8.75	Control	-0.0450	-0.0098	0.0254	15	71	∞
		Plastic treatment	-0.0222	-0.0022	0.0178	31	315	∞

Log K_{OW} values were calculated with the QSPR equation from Schenker, U., MacLeod, M., Scheringer, M., Hungerbuhler, K. *Environmental Science & Technology*, **2005**, 39, 8434-8441.