

SUPPORTING INFORMATION

Exposure of Taiwan Residents to Polychlorinated Biphenyl Congeners from Farmed, Ocean-caught and Imported Fish

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Table S1. General information on considered fish species

Species	Tilapia	Milkfish	White Pomfret	Hairtail	Cod
Original dwelling	Africa	India, Pacific Ocean	Japanese Sea to East India Sea	Temperate and tropical zones	Pacific Ocean
Habitat	Tranquil water	Surface water to 80m deep	Demersal	Demersal and migratory	Demersal
Water Environment	Fresh and salty	Fresh and salty	Salty	Salty	Salty
Supply	Farmed	Farmed	Caught off-shore	Caught off-shore	Imported
Demand	Highest throughout Taiwan	Second highest throughout Taiwan	Third highest in northern Taiwan	Popular throughout Taiwan	Popular throughout Taiwan

P.S. information was obtained from Department of Fisheries, *Fish and Shell Vol.2*; Shao, G. Z., Eds.; Department of Fisheries, Government of

Taiwan Providence: Taiwan, 1996; pp50-240.

Table S2. The method detection limits, recovery rates of matrix spikes, and toxic equivalent factors of 18 PCB congeners

PCB congener IUPAC NO	No. of chlorine	method detection limit (ng)	recovery rates of			I-toxic equivalent factor
			matrix spike (%) (n=15)	WHO98-toxic equivalent factor	- ^a /-	
28/31	3/3	0.70	77±26%	- ^a /-	-/-	
52	4	0.17	95±10%	-	-	
66	4	0.023	85±11%	-	-	
77	4	0.031	89±35%	0.0001	0.0005	
118	5	0.0026	92±12%	0.0001	0.0001	
105/153	5/6	0.0054	90±25%	0.0001/-	0.0001/0.00002	
138	6	0.062	91±13%	-	0.00002	
126	5	0.0004	75±19%	0.1	0.1	
128	6	0.005	85±19%	-	0.00002	
167	6	0.032	92±22%	0.00001	-	

156	6	0.15	92±26%	0.0005	-
157	6	0.060	87±15%	0.0005	-
180	7	0.050	79±28%	-	0.00001
170	7	0.066	88±25%	-	-
189	7	0.57	81±27%	0.0001	-

Table S3. Distribution of PCB concentrations in fish from other areas (a) as an indication of water pollution levels and (b) as food sources of PCB intake

(a)	area	No. of congeners		fish species	No. of samples		ng/g wet		pg-TEQ/g wet		year
		analyzed					wt	ng/g lipid	wt		
	Bering Sea (<i>S1</i>)	- ^a		walleye pollock	15			780			1992
	Gulf of Alaska (<i>S1</i>)	- ^a		walleye pollock	14			1000			1992
	Japan Sea (<i>S1</i>)	- ^a		walleye pollock	10			1800			1991
	North Pacific (<i>S2</i>)	7		halibut	5			66-830			1997-2001
	Pacific Coast of Canada (<i>S3</i>)	112		salmon	4		1.9-8.6		120-678		1996-1999
	Pottersburg Creek, London, ON,										
	Canada (<i>S4</i>)			fish	29		2.7				1988-1993

Lake Michigan (S5)	90	salmonids	21	1450 ^b	43100 ^b	1996
Great Lakes (S6)	- ^a	fish	22	11-5600		1996/ 1997
Swiss Lakes (S7)	18	bass	5		0.2-1.3	24-104
	18	roach	1		1.09	83
	18	whitefish	10		0.28-0.99	16-72
ORRA/ODER river estuary of						
Baltic Sea (S8)	8	perch	147		21-5000	1996/ 1997
Mediterranean coastal area	6	hake	4		136.8-298.4	2001
(reference) (S9)		sardine	4		32.4-39.2	
Mediterranean coastal area						
(industrial influence) (S9)	6	fish	1		1,294	2001
Jarford, Northern Norway (S10)	17	cod	54		245-1725	1989/ 1990
		sandeel	14		80-397	
Barents Sea, near Bjornoya,	28	polar cod	3		91-118	1995

Norway (*SH*)

		3	170-222
Ross Sea (Antarctica) (S12)	^a	icefish, notothen, silverfish	5
			4.2-138
			1994-1996

area	No. of congeners		No. of		pg-WHO-TEQ/g		
	analyzed	fish species	samples	ng/g wet wt	ng/g lipid	wet wt	year
Pacific Coast of Canada (S3)	112	farmed salmon	4	20.3-72.3		2602-6811	1996/ 1997
USA (S13)	15	ocean fish	pooled	1.76		0.22 ^c	1995
		fresh-water fish	pooled	7.48		0.74 ^c	
Ria de Aveiro, Portugal (S14)	18	farmed and wild sea bass	30		155-295		- ^a
Mediterranean area (S15)	dioxin-like PCBs	fish	- ^a			1.03-2.39	2000
Huelva, Spain (S16)	20	sardine, mackerel, tuna	33	0.542 ^b		16.5 ^b	2001
		little sole, tope, seabream	36	0.372 ^b		11.0 ^b	

Catalonia, Spain (<i>S17</i>)	11	fish	16	11.8 ^b		2000
		whitefish	- ^a	4.65 ^b	13.7 ^b	0.25 ^b
		tinned fish	- ^a	9.95 ^b	6.02 ^b	0.74 ^b
		blue fish	- ^a	30.2 ^b	2.45 ^b	2.45 ^b
The Netherlands (<i>S18</i>)	7	freshwater eel	39	13-1740		- ^a
		farmed eel	11	21-58		
		imported eel	14	<1.1-65		
Belgium (<i>S19</i>)	4	trout	4	0.85		2000/ 2001
		mackerel	1	9.96		
Northern Europe (<i>S20</i>)	29	salmon	- ^a		around 1.5-2.0 ^b	2000/2001

a: no information

b: mean values of analyzed samples

c: international TEF was used

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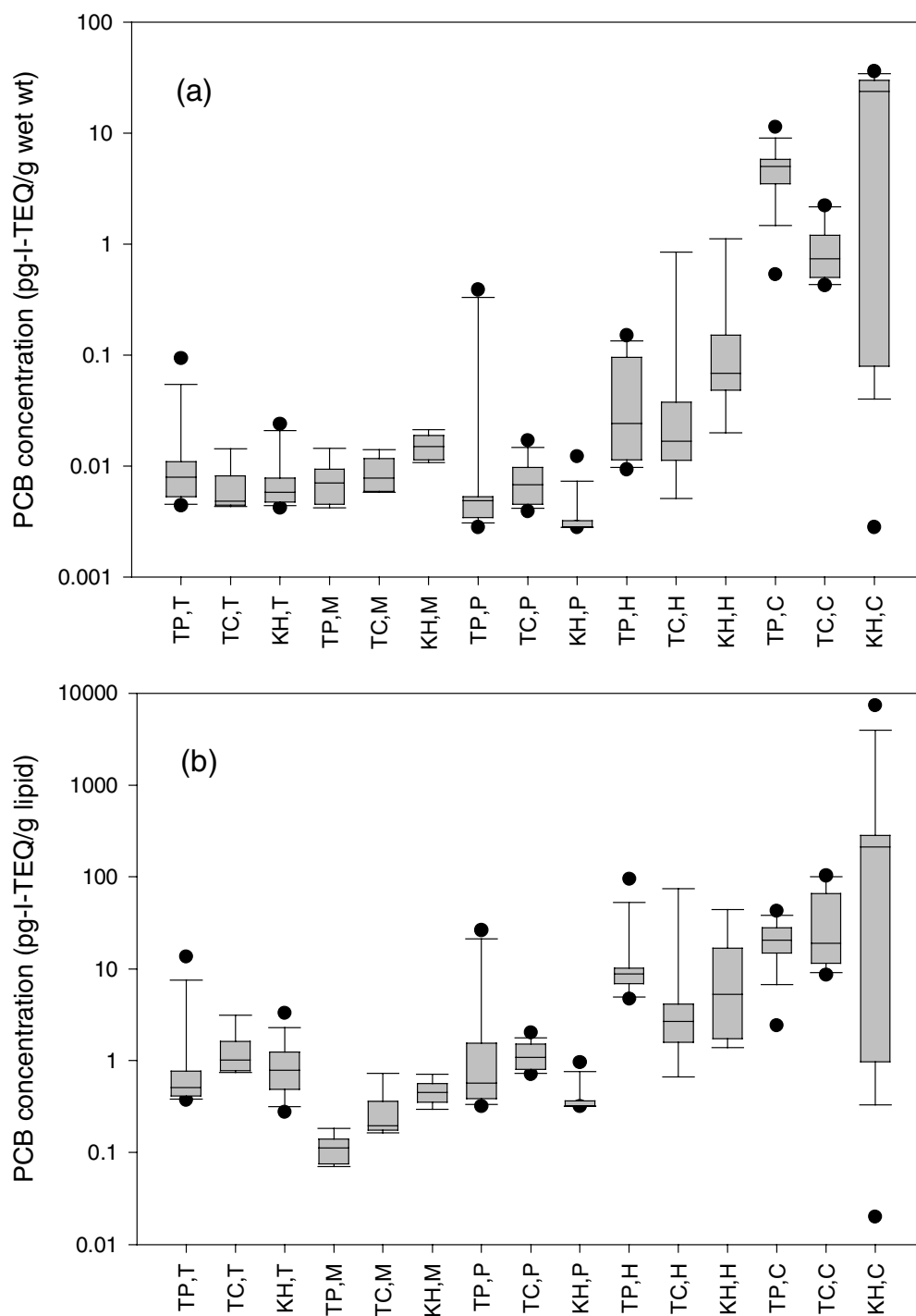


Figure S1. PCB concentrations among fish species at different purchasing areas expressed as (a) pg-I-TEQ/g wet weight, and (b) pg-I-TEQ/g lipid; TP: Taipei, TC: Taichung, KH: Kaohsiung, T: Tilapia, M: Milkfish, P: White Pomfret, H: Hairtail, C: Cod; middle lines represent median values; dots represent 5%/95% percentiles