



## Supplementary Material

**Table S1.** Characteristics of the study population according to sex ( $n = 387$ ).

Variable	Females ( $n = 190$ )			Males ( $n = 197$ )		
<b>Age (years), mean <math>\pm</math> SD</b>	50.6 $\pm$ 16.7			50.8 $\pm$ 17.5		
<b>Body mass index (Kg/m<sup>2</sup>), mean <math>\pm</math> SD</b>	27.4 $\pm$ 2.9			27.4 $\pm$ 4.9		
Normal weight (<25 kg/m <sup>2</sup> ), $n$ (%)	78 (41.0)			59 (29.9)		
Overweight (25–30 kg/m <sup>2</sup> ), $n$ (%)	67 (35.3)			100 (50.8)		
Obesity (>30 kg/m <sup>2</sup> ), $n$ (%)	45 (23.7)			38 (19.3)		
<b>Residence, <math>n</math> (%)</b>						
Coast, Motril City	101 (53.2)			75 (38.1)		
Granada City, Granada Metropolitan Area	52 (27.4)			83 (42.1)		
Poniente, Alpujarras	32 (16.8)			33 (16.8)		
Others	4 (2.1)			4 (2.0)		
Missing	1 (0.5)			2 (1.0)		
<b>Residence near to greenhouse <math>\leq</math>2000 meters (yes), <math>n</math> (%)</b>	39 (20.5)			33 (16.8)		
<b>Residence near to agricultural area <math>\leq</math>2000 meters (yes), <math>n</math> (%)</b>	115 (60.5)			101 (51.3)		
<b>Occupation in agriculture (<math>\geq</math>10 years) (yes), <math>n</math> (%)</b>	62 (32.6)			83 (42.1)		
<b>Occupation in industry (<math>\geq</math>10 years) (yes), <math>n</math> (%)</b>	14 (7.4)			41 (20.8)		
<b>Mother's occupation during pregnancy, <math>n</math> (%)</b>						
Housewife	138 (72.6)			141 (71.6)		
Agricultural worker	27 (14.2)			24 (12.2)		
Others	25 (13.2)			32 (16.2)		
<b>Current smoker (yes), <math>n</math> (%)</b>	41 (21.6)			85 (43.2)		
<b>White fish consumption (yes), <math>n</math> (%)</b>	164 (86.8)			140 (71.8)		
<b>Meat consumption, <math>n</math> (%)</b>						
$\leq$ 2 portions/week	72 (38.1)			68 (35.1)		
>2 portions/week	117 (61.9)			126 (65.0)		
<b>Milk consumer (yes), <math>n</math> (%) <sup>a</sup></b>	172 (91.0)			167 (89.8)		
<b>Cheese consumer (yes), <math>n</math> (%) <sup>a</sup></b>	175 (92.3)			184 (93.9)		
<b>Vegetable consumption, <math>n</math> (%)</b>						
<2 portions/week	39 (20.7)			66 (33.9)		
$\geq$ 2 portions/week	149 (79.3)			129 (66.2)		
<b>Beer consumption (glasses/week), mean <math>\pm</math> SD</b>	0.8 $\pm$ 2.0			5.3 $\pm$ 10.5		
<b>Water consumption (glasses/day), mean <math>\pm</math> SD</b>	5.2 $\pm$ 3.0			6.0 $\pm$ 4.6		
<b>Variable, ng/g lipid</b>	<b>25th</b>	<b>50th</b>	<b>75th</b>	<b>25th</b>	<b>50th</b>	<b>75th</b>
$\beta$ -HCH	2.3	16.1	30.5	6.5	7.3	14.5
$\alpha$ -HCH	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Dicofol	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
<b>Variable</b>	<b><math>n</math> (%)</b>			<b><math>n</math> (%)</b>		
$\beta$ -HCH (>LOD)	166 (87.4)			160 (81.2)		
$\alpha$ -HCH (>LOD)	58 (30.5)			26 (13.2)		
Dicofol (>LOD)	37 (19.5)			39 (19.8)		

$\beta$ -HCH:  $\beta$ -Hexachlorocyclohexane;  $\alpha$ -HCH:  $\alpha$ -Hexachlorocyclohexane; LOD: limit of detection; SD: standard deviation. <sup>a</sup>:

Consumer is referred to intake of any amount of milk or cheese per week.

**Table S2.** Predictors of adipose tissue  $\beta$ -HCH,  $\alpha$ -HCH and dicofol concentrations among females from GraMo cohort ( $n = 190$ ).

	$\beta$ -HCH <sup>a</sup> ( $R^2 = 0.45$ )		$\alpha$ -HCH <sup>b</sup> (pseudo- $R^2 = 0.39$ )		Dicofol <sup>b</sup> (pseudo- $R^2 = 0.26$ )	
	$\beta$ (95%CI)	<i>p</i> -value	OR (95%CI)	<i>p</i> -value	OR (95%CI)	<i>p</i> -value
<b>Age (years)</b>	0.07 (0.05, 0.08)	<0.001	1.09 (1.06, 1.13)	<0.001	0.98 (0.96, 1.01)	0.213
<b>Body mass index (Kg/m<sup>2</sup>)</b>	0.05 (0.01, 0.08)	0.016	1.11 (1.03, 1.21)	0.009	1.03 (0.96, 1.11)	0.396
<b>Residence</b>						
Coast, Motril city	1.00 (ref.)		1.00 (ref.)		1.00 (ref.)	
Granada city, Granada	-0.29 (-0.79, 0.22)	0.269	0.02 (0.00, 0.09)	< 0.001	0.09 (0.02, 0.34)	<0.001
Metropolitan Area						
Poniente, Alpujarras	0.43 (-0.19, 1.05)	0.176	0.14 (0.04, 0.43)	0.001	0.09 (0.01, 0.78)	0.029
<b>Residence near to agricultural area <math>\leq 2000</math> meters</b>						
No	1.00 (ref.)		1.00 (ref.)		1.00 (ref.)	
Yes	-0.69 (-1.15, -0.22)	0.004	0.33 (0.12, 0.88)	0.027	0.27 (0.11, 0.66)	0.004
<b>Residence near to greenhouse area <math>\leq 2000</math> meters</b>						
No					1.00 (ref.)	
Yes					0.53 (0.18, 1.58)	0.257
<b>Occupation in industry <math>\geq 10</math> years</b>						
No	1.00 (ref.)					
Yes	0.63 (-0.18, 1.45)	0.123				
<b>White fish consumption</b>						
No					1.00 (ref.)	
Yes					0.21 (0.07, 0.63)	0.006
<b>Milk consumer <sup>c</sup></b>						
No	1.00 (ref.)		1.00 (ref.)			
Yes	0.90 (0.14, 1.66)	0.020	2.13 (0.48, 9.44)	0.320		
<b>Cheese consumer <sup>c</sup></b>						
No	1.00 (ref.)					
Yes	1.31 (0.48, 2.15)	0.002				
<b>Vegetable consumption</b>						
<2 times per week	1.00 (ref.)					
$\geq 2$ portions/week	-0.42 (-0.96, 0.12)	0.123				

<sup>a</sup>: Multivariable linear regression analysis. Dependent variable: log-transformed concentrations (ng/g lipid). <sup>b</sup>: Multivariable logistic regression analysis. Dependent variable: dichotomized concentrations (> limit of detection vs. < limit of detection). <sup>c</sup>: Consumer is referred to intake of any amount of milk or cheese per week.  $\beta$ -HCH: beta-hexachlorocyclohexane;  $\alpha$ -HCH: alpha-hexachlorocyclohexane.  $\beta$ : Beta coefficient; CI: Confidence interval; OR: Odds Ratio; Ref.: reference category.

**Table S3.** Predictors of adipose tissue  $\beta$ -HCH,  $\alpha$ -HCH and dicofol concentrations among males from GraMo cohort ( $n = 197$ ).

	$\beta$ -HCH <sup>a</sup> ( $R^2 = 0.41$ )		$\alpha$ -HCH <sup>b</sup> (pseudo- $R^2 = 0.47$ )		Dicofol <sup>b</sup> (pseudo- $R^2 = 0.14$ )	
	$\beta$ (95%CI)	<i>p</i> -value	OR (95%CI)	<i>p</i> -value	OR (95%CI)	<i>p</i> -value
<b>Age (years)</b>	0.05 (0.04, 0.06)	<0.001	1.12 (1.06, 1.20)	<0.001	0.99 (0.96, 1.01)	0.430
<b>Body mass index (Kg/m<sup>2</sup>)</b>	0.09 (0.04, 0.13)	<0.001	1.02 (0.91, 1.14)	0.803	1.03 (0.94, 1.13)	0.559
<b>Residence</b>						
Coast, Motril city	1.00 (ref.)		1.00 (ref.)		1.00 (ref.)	
Granada city, Granada Metropolitan Area	0.12 (-0.37, 0.61)	0.627	0.02 (0.00, 0.26)	0.002	0.26 (0.09, 0.72)	0.009
Poniente, Alpujarras	0.71 (0.10, 1.32)	0.023	0.17 (0.03, 0.79)	0.025	0.51 (0.16, 1.59)	0.244
<b>Residence near to agricultural area <math>\leq 2000</math> meters</b>						
No	1.00 (ref.)					
Yes	-0.54 (-0.98, -0.10)	0.017				
<b>Residence near to greenhouse area <math>\leq 2000</math> meters</b>						
No					1.00 (ref.)	
Yes					0.65 (0.19, 2.18)	0.486
<b>Mother's occupation during pregnancy</b>						
Housewife	1.00 (ref.)		1.00 (ref.)		1.00 (ref.)	
Agricultural worker	1.05 (0.38, 1.72)	0.002	15.19 (2.83, 81.60)	0.002	0.44 (0.11, 1.82)	0.257
Others	-0.25 (-0.82, 0.32)	0.397	0.15 (0.01, 2.31)	0.172	0.81 (0.23, 2.83)	0.748
<b>Occupation in agriculture <math>\geq 10</math> years</b>						
No	1.00 (ref.)				1.00 (ref.)	
Yes	-1.04 (-1.54, -0.54)	<0.001			1.72 (0.67, 4.40)	0.258
<b>Water consumption (glasses/day)</b>	0.09 (0.04, 0.14)	0.001	1.16 (0.99, 1.35)	0.062	0.88 (0.78, 0.99)	0.034
<b>Beer consumption (glasses/week)</b>	-0.04 (-0.06, -0.02)	<0.001	0.89 (0.77, 1.02)	0.089		
<b>Current smoker</b>						
No					1.00 (ref.)	
Yes					0.30 (0.12, 0.75)	0.011
<b>White fish consumption</b>						
No	1.00 (ref.)					
Yes	0.55 (0.10, 0.99)	0.018				
<b>Meat consumption</b>						
<2 portions/week	1.00 (ref.)		1.00 (ref.)		1.00 (ref.)	
$\geq 2$ portions/week	0.43 (-0.02, 0.88)	0.063	5.22 (1.16, 23.41)	0.031	0.44 (0.18, 1.07)	0.072
<b>Vegetable consumption</b>						
<2 portions/week			1.00 (ref.)			
$\geq 2$ portions/week			0.24 (0.05, 1.07)	0.061		

<sup>a</sup>: Multivariable linear regression analysis. Dependent variable: log-transformed concentrations (ng/g lipid). <sup>b</sup>: Multivariable logistic regression analysis. Dependent variable: dichotomized concentrations (> limit of detection vs. < limit of detection).  $\beta$ -HCH: beta-hexachlorocyclohexane;  $\alpha$ -HCH: alpha-hexachlorocyclohexane.  $\beta$ : Beta coefficient; CI: Confidence interval; OR: Odds Ratio; Ref.: reference category.

**Table S4.** Predictors of adipose tissue  $\beta$ -HCH concentrations in GraMo cohort according to the logistic multivariable model.

	$\beta$ -HCH (pseudo-R <sup>2</sup> = 0.36)	
	OR (95% CI)	p-value
<b>Age (years)</b>	1.10 (1.07, 1.13)	<0.001
<b>Sex</b>		
Females	1.00 (ref.)	
Males	0.18 (0.08, 0.41)	<0.001
<b>Body mass index (Kg/m<sup>2</sup>)</b>	1.06 (0.98, 1.12)	0.152
<b>Residence</b>		
Coast, Motril	1.00 (ref.)	
Granada city, Granada Metropolitan Area	0.28 (0.11, 0.69)	0.006
Poniente, Alpujarras	1.49 (0.61, 3.64)	0.379
<b>Residence near to agricultural area <math>\leq 2000</math> meters</b>		
No	1.00 (ref.)	
Yes	0.26 (0.12, 0.58)	0.001
<b>Mother's occupation during pregnancy</b>		
Housewife	1.00 (ref.)	
Agricultural worker	2.10 (0.81, 5.49)	0.128
Others	0.25 (0.06, 0.98)	0.047
<b>Occupation in agriculture <math>\geq 10</math> years</b>		
No	1.00 (ref.)	
Yes	0.78 (0.35, 1.72)	0.538
<b>Occupation in industry <math>\geq 10</math> years</b>		
No	1.00 (ref.)	
Yes	0.89 (0.32, 2.52)	0.834
<b>Water consumption (glasses/day)</b>	1.05 (0.94, 1.18)	0.361
<b>Beer consumption (glasses/week)</b>	0.96 (0.88, 1.05)	0.410
<b>White fish consumption</b>		
No	1.00 (ref.)	
Yes	3.78 (1.21, 11.80)	0.022
<b>Meat consumption</b>		
<2 portions/week	1.00 (ref.)	
$\geq 2$ portions/week	1.04 (0.51, 2.10)	0.918
<b>Milk consumer <sup>a</sup></b>		
No	1.00 (ref.)	
Yes	2.91 (0.756, 11.36)	0.123
<b>Cheese consumer <sup>a</sup></b>		
No	1.00 (ref.)	
Yes	1.39 (0.37, 5.17)	0.623
<b>Vegetables consumption</b>		
<2 portions/week	1.00 (ref.)	
$\geq 2$ portions/week	0.27 (0.12, 0.61)	0.002

<sup>a</sup>: Consumer is referred to intake of any amount of milk or cheese per week.  $\beta$ -HCH: betahexachlorocyclohexane; CI: Confidence interval; OR: Odds Ratio; Ref.: reference category.

**Table S5.** Review of studies on human biomonitoring of  $\beta$ -HCH,  $\alpha$ -HCH and dicofol levels in the last 10 years.

Reference	N	Study population	Location	Recruitment data	Matrix	Units	$\beta$ -HCH	$\alpha$ -HCH	Dicofol
Arguin et al., 2010	61	Vegans, omnivores and obese men	USA	NA	Plasma	ng/g ng/mL	Vegans: 6.515 <sup>AM</sup> Omnivores: 5.720 <sup>AM</sup> Standard: 0.045 <sup>AM</sup> Fat-reduced: 0.051 <sup>AM</sup> Fat-substituted: 0.088 <sup>AM</sup>	-	-
Grimalt et al., 2010	695	Child at birth and at 4 years	Spain	1997/98	Serum	ng/mL	Cord: 0.21 <sup>AM</sup> Serum: 0.28 <sup>AM</sup>	-	-
Lu et al., 2010	262	Children aged 6–10 years	China	2008	Serum	ng/mL	-	0.0093 <sup>AM</sup>	-
Ociepa-Zawal et al., 2010	77	Breast cancer patients and control	Poland	NA	Adipose tissue	ng/g fat	Co: 18 <sup>M</sup> , Ca: 24 <sup>M</sup>	Co: 24 <sup>M</sup> , Ca: 7 <sup>M</sup>	-
Park et al., 2010	100	Metabolic syndrome cases and controls	Korea	2006	Serum	ng/g lipid	Co: 46.1 <sup>AM</sup> , Ca: 61.5 <sup>AM</sup>	-	-
Pathak et al., 2010	60	Primiparous women	India	NA	Blood	ng/mL	Full-term: 4.12 <sup>AM</sup> Preterm: 9.14 <sup>AM</sup>	Full-term: 5.87 <sup>AM</sup> Preterm: 6.65 <sup>AM</sup>	-
Porta et al., 2010	919	General population	Spain	2001/02	Serum	ng/g lipid	91.9 <sup>M</sup>	-	-
Sawada et al., 2010	603	Prostate cancer patients and controls	Japan	1990/95	Plasma	ng/g lipid	Co: 320 <sup>M</sup> , Ca: 310 <sup>M</sup>	-	-
Son et al., 2010	80	Type 2 diabetes cases and controls	Korea	2006	Serum	ng/g lipid	Co: 44.0 <sup>AM</sup> , Ca: 57.9 <sup>AM</sup>	-	-
Weldon et al., 2010	364	Mexican-American pregnant women	USA	1999/02	Serum	ng/g lipid	39.3 <sup>M</sup>	-	-
Cao et al., 2011	1438	Pregnant women	China	2008/09	Cord blood serum	ng/mL	0.45 <sup>M</sup>	0.05 <sup>M</sup>	-
Ibarluzea et al., 2011	1259	Pregnant women	Spain	2004/08	Serum	ng/g lipid	19.14 <sup>GM</sup>		
Wang et al., 2011	633	Residents in three cities from China	China	2008/09	Adipose tissue	ng/g	189, 424, 253 <sup>AM</sup>	1.81, 3.19, 1.79 <sup>AM</sup>	9.06 <sup>AM</sup> , 2.91 <sup>AM</sup> , 4.82 <sup>AM</sup>
Bräuner et al., 2012	245	General population	Denmark	1993/97	Adipose tissue	ng/g	♂: 51 <sup>M</sup> ♀: 61 <sup>M</sup>	-	-
Channa et al., 2012	241	Delivering women	South Africa	NA	Plasma	ng/mL	0.064 <sup>M</sup>	0.013 <sup>M</sup>	-
Dhananjayan et al., 2012	30	Agriculture and sheep wool workers	India	2009	Blood	ng/mL	9.55 <sup>AM</sup>	3.54 <sup>AM</sup>	-
Kanazawa et al., 2012	186	Pregnant women	Japan	2002/05	Blood	pg/g wet	150 <sup>GM</sup>	1.1 <sup>GM</sup>	-
Kaushik et al., 2012	79	Residents in Haryana state	India	1992/02	Serum	ng/mL	1992: 39 <sup>AM</sup> , 2002: 53 <sup>AM</sup>	1992: 201 <sup>AM</sup> , 2002: 8 <sup>AM</sup>	-

Table S5. Continued

Reference	N	Study population	Location	Recruitment data	Matrix	Units	β-HCH	α-HCH	Dicofol
Louis et al., 2012	939	Hospital women and healthy women	USA	2007/09	Omentum fat and serum	ng/g	Endom: 0.1991 <sup>M</sup> Non-endom: 0.1200 <sup>M</sup> Endom: 0.0063 <sup>M</sup> Non-endom: 0.0063 <sup>M</sup> Endom: 0.0066 <sup>M</sup> Non-endom: 0.0063 <sup>M</sup>	-	-
Porta et al., 2012	378	General population	Spain	2002/06	Serum	ng/g lipid	2002: 128.9 <sup>M</sup> , 2006: 64.2 <sup>M</sup>	-	-
Rudge et al., 2012	155	Delivering women	Brazil	2007/08	Blood	ng/mL	0.029 <sup>M</sup>	0.001 <sup>M</sup>	-
Sharma et al., 2012	100	FGR cases and controls	India	2008	Maternal blood	ppb	Co: 3.97 <sup>AM</sup> , Ca: 9.02 <sup>AM</sup>	Co: 2.92 <sup>AM</sup> , Ca: 4.55 <sup>AM</sup>	-
Trejo-Acevedo et al., 2012	45	Healthy children aged 4–12 years	Mexico	2006	Plasma	ng/mL	ND (LOD = 0.3)	ND (LOD = 0.3)	-
Zhao et al., 2012	1307	Carcinoma cases and controls	China	2007/09	Serum	ng/mL	Co: 9.36 <sup>M</sup> , Ca: 10.23 <sup>M</sup>	Co: 1.38 <sup>M</sup> , Ca: 1.81 <sup>M</sup>	-
Bjeremo et al., 2013	246	General population	Swiss	2010/11	Serum	ng/mL	0.078 <sup>M</sup>	-	-
Dewan et al., 2013	60	Mothers' SGA new-born	India	2009/10	Maternal blood	ng/mL	Co: 5.9 <sup>AM</sup> , Ca: 8.1 <sup>AM</sup>	Co: 4.9 <sup>AM</sup> , Ca: 5.2 <sup>AM</sup>	-
Freire et al., 2013	610	Men and women exposed population	Brazil	2003 04	Serum	ng/mL	♂: 6.00 <sup>M</sup> , ♀: 6.98 <sup>M</sup>	♂: 2.52 <sup>M</sup> , ♀: 2.60 <sup>M</sup>	-
Malarvannan et al., 2013	52	Obese individuals	Belgium	2010/12	Adipose tissue	ng/g	Visceral & subcutaneous fat: 18 <sup>M</sup>	Visceral fat: 1.0 <sup>M</sup> Subcutaneous fat: 0.21 <sup>M</sup>	-
Morales et al., 2013	2031	Pregnant women	Spain	2003/08	Serum	ng/g lipid	26.5 <sup>GM</sup>	-	-
Mrema et al., 2013	136	General population	Italy	NA	Serum	pmol/g lipid	♂ (N): 59 <sup>M</sup> , ♀ (N): 65 <sup>M</sup> ♂ (P): 303 <sup>M</sup> , ♀ (P): 327 <sup>M</sup> ♂ (M): 50 <sup>M</sup> , ♀ (M): 52 <sup>M</sup>	-	-
Porta et al., 2013	246	Exposed population	Italy	2006/07	Serum	ng/g	60.6 <sup>GM</sup>	-	-
Reid et al., 2013	167	Pregnant women	Australia	2009/11	Plasma	ng/mL	0.18 <sup>AM</sup>	-	-
Singh et al., 2013	145	Alzheimer's cases and controls	India	2010/11	Blood	ng/mL	Ca: 4.16 <sup>AM</sup> , Co: 0.25 <sup>AM</sup>	Ca: 0.25 <sup>AM</sup> , Co: 0.56 <sup>AM</sup>	-
Upson et al., 2013	818	Endometriosis cases and controls	USA	1996/01	Serum	ng/g	Co: 0.431 <sup>M</sup> , Ca: 0.519 <sup>M</sup>	-	-
Valera et al., 2013	315	General population	Canada	1992	Plasma	ng/mL	0.1 <sup>GM</sup>	-	-
Wang et al., 2013	54	Healthy women	China	2011	Plasma	ng/g lipid	♂: 346 <sup>M</sup> , ♀: 221 <sup>M</sup>	♂: 27.7 <sup>M</sup> , ♀: 17.8 <sup>M</sup>	-

Table S5. Continued

Reference	N	Study population	Location	Recruitment data	Matrix	Units	β-HCH	α-HCH	Dicofol
Watanabe et al., 2013	20	Cadavers	Japan	2003/04	Adipose tissue	ng/g lipid	♂: 770 <sup>AM</sup> , ♀: 950 <sup>AM</sup>	♂: 1.8 <sup>AM</sup> , ♀: 2.3 <sup>AM</sup>	-
Adlard et al., 2014	363	Canadian foreign-born mothers, Canadian born mothers, Mexican mothers	Canada, Mexico	2005/07	Plasma	ng/g lipid	7.7, 2.1, 8.3 <sup>GM</sup>	-	-
Azandjeme et al., 2014	118	Diabetics adults	West Africa	2011	Serum	ng/g lipid	2.9 <sup>GM</sup>	-	-
Ben Hassine et al., 2014	113	Hospitals individuals	Tunisia	2011/12	Serum	ng/g lipid	9.5 <sup>M</sup>	-	-
Braun et al., 2014	60	Pregnant women	USA	2003/06	Serum	ng/g lipid	1.9 <sup>GM</sup>	-	-
Curren et al., 2014	173	Primiparous women in 4 Canadian Artic centres & Canadian-foreign-born	Canada	2005/07	Plasma	ng/g lipid	3.7, 3.0 <sup>GM</sup> , ND, 2.4, 2.1, 7.7 <sup>GM</sup>	-	-
Freire et al., 2014	604	Rural men, premenopausal women, peri-/postmenopausal women	Brazil	2003/04	Serum	ng/mL	6.0, 6.3, 11.7 <sup>M</sup>	2.5, 2.8, 2.4 <sup>M</sup>	-
Guo et al., 2014	81	Mother-infant pairs	China	2010	Serum	ng/g	Mothers: 67.7 <sup>GM</sup> , Newborns: 33.9 <sup>GM</sup>	-	-
Itoh et al., 2014	399	Women from general population	Japan	2001/05	Serum	ng/g lipid	64 <sup>M</sup>	-	-
Lam et al., 2014	350	Boys aged 8-9 years	Russia	2003/05	Serum	ng/g lipid	168 <sup>M</sup>	-	-
Li et al., 2014	247	Mother-infant pairs	China	2010	Serum	ng/g lipid	Maternal: 27.33 <sup>M</sup> Neonatal: 13.33 <sup>M</sup>	<LOD <sup>M</sup>	-
Mørck et al., 2014	259	Mothers and schoolchildren	Danmark	2011	Serum	ng/g lipid	Mothers: 15 <sup>AM</sup> Children: 2 <sup>AM</sup>	-	-
Saoudi et al., 2014	386	General population	France	2006/07	Serum	ng/g lipid	27.0 <sup>M</sup>	0.74 <sup>M</sup>	-
Savitz et al., 2014	1921	Pregnant women	USA	1959/66	Serum	ng/mL	1.39 <sup>M</sup>	-	-
Steenland et al., 2014	89	Elderly subjects >65 years	Costa Rica	2012	Serum	ng/mL	0.71 <sup>M</sup>	-	-
Waliszewski et al., 2014	225	General population	Mexico	2010/11	Adipose tissue	ng/g	70, 109, 68 <sup>AM</sup>	-	-
Lu et al., 2015	142	Pregnant mothers	Shangai	2011/12	Breastmilk	ng/g lipid	12.9 <sup>M</sup>	0.41 <sup>M</sup>	-
Sharma et al., 2015	111	General population	Pakistan/India	2014	Blood	ng/mL	84.56 <sup>M</sup>	7.57 <sup>M</sup>	-
Zubero et al., 2015	162	General population	Spain	2006/08	Serum	ng/g lipid	-	2006: 46.2 <sup>GM</sup> 2008: 36.2 <sup>GM</sup>	-

Table S5. Continued

Reference	N	Study population	Location	Recruitment data	Matrix	Units	β-HCH	α-HCH	Dicofol
Castillo-Castañeda et al., 2016	108	Lactating women	Mexico	NA	Breastmilk	ng/mL	11 <sup>M</sup>	2.4 <sup>M</sup>	-
Dimitriadou et al., 2016	87	Primipara and multipara mothers	Greece	2004/05	Breastmilk	ng/g lipid	40 <sup>M</sup>	<0.20 <sup>AM</sup>	-
Jeong et al., 2016	72	New-born infants	Korea	2012	Meconium	ng/g lipid	-	3.83 <sup>M</sup>	-
Achour et al., 2017	40	Patients undergoing surgery	Tunisia	2014	Adipose tissue	ng/g lipid	5.58 <sup>M</sup>	1.15 <sup>M</sup>	-
Bravo et al., 2017	698	Pregnant women	Argentina	2011/12	Maternal serum	ng/g lipid	Ushuaia: 6.8 <sup>M</sup> , Salta: 11 <sup>M</sup>	Ushuaia: 4.1 <sup>M</sup> , Salta: 0.51 <sup>M</sup>	-
Bjerregaard-Olesen et al., 2017	197	Pregnant women	Denmark	2011/13	Serum	ng/g lipid	2011: 2.8 <sup>AM</sup> ; 2012: 2.0 <sup>AM</sup> ; 2013: 2.0 <sup>AM</sup>	-	-
Do Nascimento et al., 2017	542	Blood donors aged 18–65	Brazil	2015	Serum	ng/mL	0.28 <sup>GM</sup>	-	-
Mamontova et al., 2017	139	Mothers	Russia	1997/09	Breastmilk	ng/g lipid	-	Villages: Balanansk: 6.8 <sup>AM</sup> Kachug: 4.1 <sup>AM</sup> Elantsy: 5.5 <sup>AM</sup> Onguren: 3.4 <sup>AM</sup> Khuzhir: 1.7 <sup>AM</sup> Maloye: 3.2 <sup>AM</sup> Bolshoye: 3.2 <sup>AM</sup> Goloustnoe: 3.2 <sup>AM</sup> Tankhoy: 1.2 <sup>AM</sup> Towns: Usol'e-Sibirskoe: 2.6 <sup>AM</sup> Irkutsk: 3.1 <sup>AM</sup> Schelekhovo: 5.6 <sup>AM</sup> Ust'-Ilmsk: 2.0 <sup>AM</sup> Baikal'sk: 3.1 <sup>AM</sup> Bratsk: 3.9 <sup>AM</sup> Petrovsk-Zabaikal'skiy: 2.3 <sup>AM</sup>	-
Ramos et al., 2017	1880	General population	Spain	2009/10	Serum	ng/g lipid	♂: 100.6 <sup>GM</sup> ♀: 124.5 <sup>GM</sup>	-	-
Thomas et al., 2017	12175	General population	Australia	2002/13	Serum	ng/g lipid	2002/03: 10.1 <sup>AM</sup> 2008/09: 7.1 <sup>AM</sup> 2010/11: 4.3 <sup>AM</sup> 2012/13: 5.0 <sup>AM</sup>	-	-



Table S5. Continued

Reference	N	Study population	Location	Recruitment data	Matrix	Units	β-HCH	α-HCH	Dicofol
Wang et al., 2017	1923	General population	China	2014	Serum	ng/g lipid	Cities: Huaihua: 139.95 <sup>GM</sup> Yitong: 100.83 <sup>GM</sup> Ganzi: 52.34 <sup>GM</sup> Lingshui: 34.61 <sup>GM</sup> Weifang: 168.52 <sup>GM</sup>	Cities: Huaihua: 0.38 <sup>GM</sup> Yitong: 1.31 <sup>GM</sup> Ganzi: 1.23 <sup>GM</sup> Lingshui: 0.91 <sup>GM</sup> Weifang: 1.24 <sup>GM</sup>	-
Coakley et al., 2018	734	General population aged 19–64	New Zealand	2011/12	Serum	ng/g lipid	7.0 <sup>GM</sup>	-	-
Eroglu et al., 2018	100	Agricultural workers women	Turkey	2013	Breastmilk	ng/g lipid	147.36 <sup>M</sup>	25.75 <sup>M</sup>	-
González-Alzaga et al., 2018	133	Children living in farming communities	Spain	2011	Serum	ng/g lipid	21 <sup>GM</sup>		
Harmouche-Karaki et al., 2018	314	University students	Lebanon	2013/15	Serum	ng/g lipid	8.6 <sup>GM</sup>	-	-
Kim et al., 2018	180	Residents over 40 years of age	Korea	2006	Serum	ng/g lipid	HP: 37.3 <sup>M</sup> , MS: 52.2 <sup>M</sup> T2DM: 52.3 <sup>M</sup>	-	-
Li et al., 2018	100	Blood donors	China	NA	Plasma	ng/mL	♂: 2.65 <sup>M</sup> , ♀: 2.85 <sup>M</sup>	♂: 3.64 <sup>M</sup> , ♀: 3.74 <sup>M</sup>	<LOD <sup>M</sup>
Song et al., 2018	40	Healthy lactation women	China	NA	Breastmilk	ng/g lipid	105 <sup>AM</sup>	-	-
Toichuev et al., 2018	508	Women who have just given birth	Kyrgyzstan	2011/15	Placenta	ng/g	77.0 <sup>M</sup>	4.6 <sup>M</sup>	-
Zong et al., 2018	793	Women with T2DM and controls	USA	1995/2000	Blood	ng/g lipid	Co: 9.84 <sup>AM</sup> , Ca: 14.3 <sup>AM</sup>	-	-
Aerts et al., 2019	206	Breastfeeding women	Belgium	2014	Breastmilk	ng/g lipid	2.40 <sup>M</sup>	-	-
Bravo et al., 2019	250	Pregnant women	Russia	2014/15	Serum	ng/g lipid	38 <sup>AM</sup>	3.3 <sup>AM</sup>	-
Luzardo et al., 2019	121	General population	Romania	2017/08	Serum	ng/mL	0.5 <sup>M</sup>	-	-
Yin et al., 2019	79	Volunteer mothers	China	2016	Maternal serum, cord serum and placenta	ng/g lipid	Maternal serum: 7.31 <sup>M</sup> Cord serum: 4.35 <sup>M</sup> Placenta: 3.21 <sup>M</sup>	Maternal serum: 1.62 <sup>M</sup> Cord serum: 0.85 <sup>M</sup> Placenta: 0.19 <sup>M</sup>	-
Narduzzi et al., 2020	602	Exposed participants	Italy	2013/15	Serum	ng/g lipid	71 <sup>M</sup>	-	-

β-HCH: β-Hexachlorocyclohexane; α-HCH: α-Hexachlorocyclohexane; NA: Non available; LOD: Limit of detection; ND: Non detected; <sup>GM</sup> Geometric Mean; <sup>AM</sup> Arithmetic mean; <sup>M</sup> Median; HP: Healthy participants; MS: Metabolic Syndrome; T2DM: Type 2 Diabetes Mellitus; ♂: men, ♀: women; Co: controls; Ca: cases; endom: endometriosis; non-endom: non-endometriosis; N: novafeltria; P: Pavia; M: Milan; V: Veracruz; P: Puebla; T: Tabasco; FGR: Fetal Growth Restriction