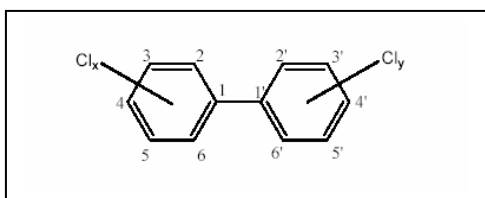


ELISA Kit for Environmental Pollutants Coplanar Polychlorinated Biphenyls (PCBs)

Coplanar PCB ELISA Kit

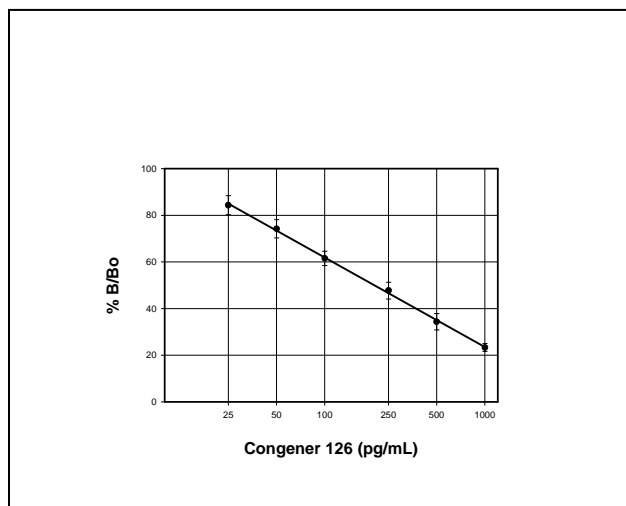
- ◇ The antibody binds primarily PCB congeners with high TEF value, PCB congeners 126 and 169.
- ◇ The assay range is between 25 ppt and 1,000 ppt (based on congener 126). This supersensitive assay allows the determination of coplanar PCBs in a wide range of environmental samples (water, soil, sediment, fish tissue, etc.).
- ◇ Total time for measurement is less than 120 minutes.
- ◇ The kit (96 Tests), a microtiter plate format with ready to use reagents, enables faster assay kinetics, super sensitivity, and the simultaneous measurement of multiple samples at a reasonable cost.

Chemical Structure



PCBs are industrial compounds which are known to be among the most persistent and widely distributed pollutants in the global ecosystem. They tend to bioaccumulate in the fatty tissues of animals, including humans. The non-ortho substituted congeners (coplanar) structurally resemble dioxin and exhibit the highest dioxin-like activities based on their ability to interact with the aryl hydrocarbon receptor (AhR)¹. Health risk due to coplanar PCB exposure are expressed by dioxin (TEQ) equivalents, using toxicity equivalency factors (TEFs). Conventional methods for the analysis of co-PCBs use high resolution GC/MS, are expensive, time-consuming, and require specialized equipment. This ELISA had the highest sensitivity for congeners 126 and 169 (the lowest quantification limit for congener 169 is 4 pg/ml).

Coplanar PCB Standard Curve



Samples containing PCBs within the dynamic range (25-1,000 ppt) can be directly tested in the assay after filtration.



Cross-reactivity Pattern

The cross-reactivity of the Abraxis Coplanar PCB Assay for various congeners and Aroclors can be expressed as the least detectable dose (LDD) which is estimated at 90% B/Bo, or as the dose required for the 50% absorbance inhibition (50% B/Bo)

Compound	LDD (ppt)	50% B/Bo (ppt)	TEF ⁽¹⁾
Congener 126	14	270	0.1
Congener 169	4	90	0.01
Congener 77	300	5,100	0.0001
Congener 189	700	9,000	0.0001
Congener 81	700	10,000	0.0001
Congener 123	2200	270,000	0.0001
Congener 167	3000	54,000	0.00001
Congener 105	3000	400,000	0.0001
Congener 156	3300	50,000	0.0005
Congener 114	5000	115,000	0.0005
Congener 157	10,000	140,000	0.0005
Congener 118	26,000	240,000	0.0001
Congener 170	NR	NR	
Congener 180	NR	NR	
Aroclor 1246	7,000	480,000	
Aroclor 1248	70,000	440,000	
Aroclor 1056	90,000	3,200,000	
Aroclor 1254	100,000	1,500,000	
Aroclor 1262	90,000	10,000,000	
Aroclor 1221	120,000	4,200,000	
Aroclor 1268	120,000	40,000,000	
Aroclor 1016	540,000	4,000,000	
Biphenyl	NR	NR	

NR = non reactive up to 1,000,000 ppt

Sample Correlation

This ELISA exhibits good correlation with GC/HRMS Method 1668A.

Kit Format

Microtiter Plate Kit format, (96Tests) PN 530011

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