

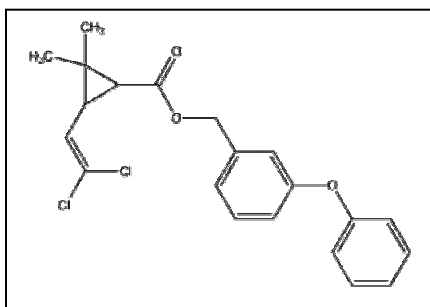
ELISA Kit for Agricultural Pollutants

Pyrethroid ELISA Kit

(Magnetic Particle Format)

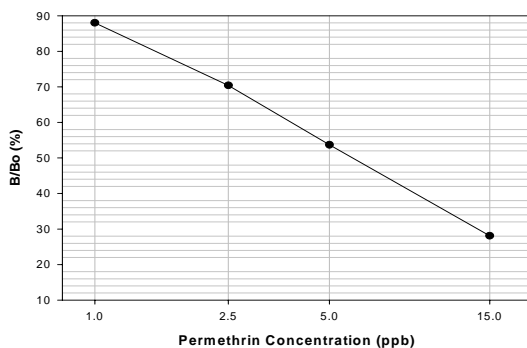
- ◇ The antibody binds Permethrin and related Pyrethroids and does not cross-react with other non-related agricultural compounds.
- ◇ The assay range is between 1.0 ppb and 15.0 ppb. The assay sensitivity allows the determination of Pyrethroids in a range of environmental samples (water, soil, sediment, fish plasma, etc.).
- ◇ Direct sample. No time-consuming sample extraction or the use of hazardous organic solvents.
- ◇ Total time for measurement is less than 90 minutes.
- ◇ The kit (100 Tests), a magnetic particle 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



Pyrethroids are a group of man-made pesticides similar to the natural pesticide pyrethrum, which is produced by chrysanthemum flowers. Pyrethroids are important insecticides used in agriculture, forestry, horticulture, and in household pesticides, pet sprays and shampoos. Some pyrethroids are also used as lice treatments that can be applied directly to the head, and as mosquito repellents that can be applied to clothes. Pyrethroids usually work as contact insecticides, damaging the nervous system of insects which come into contact with it, leading to their death or "knockdown". Permethrin is bound tightly to soils and it has a half life of 3 to 6 weeks in soils. Permethrin can also be found in surface waters and when applied to control insects concentrations up to 0.8 mg/L have been reported. The WHO has a health-based advisory of 20 ppb for Permethrin in drinking water. This ELISA test kit detects Permethrin and related Pyrethroids in environment samples at the ppb levels.

Permethrin Standard Curve



Samples containing Pyrethroids within the dynamic range (1.0-15 ppb) can be directly tested in the assay after diluting 1:1 with methanol.

Basic Test procedure

- Add 250 uL of sample and 500 uL of antibody coupled magnetic particles. Vortex.
- Incubate for 20 minutes.
- Add 250 uL of conjugate. Vortex and incubate for 30 minutes.
- Separate using the magnetic separator, decant and wash.
- Add 500 uL of color solution.
- Incubate 30 minutes.
- Stop the reaction and read color at 450 nm. Quantitate results.

Cross-reactivity Pattern

Cross-reactivity of the Abraxis Pyrethroid ELISA expressed as the least detectable dose (LDD) which is estimated at 90% B/Bo and at the concentration required to displace 50% (50% B/Bo).

Compound	LDD (ppb)	50% B/Bo (ppb)
Permethrin	0.750	4.25
Lamba (λ) Cyhalothrin	9.2	89.5
Cypermethrin	4.75	100
Bifenthrin	13.5	150
Resmethrin	200	2,400
Cyfluthrin	220	3,400
Tetramethrin	>1,000	>10,000
3, PBA	170	1,700

The following compounds demonstrated no reactivity in the Prethroid Assay when tested at concentrations up to 1,000 ppb: aldicarb, aldicarb sulfoxide, aldicarb sulfone, alachlor, atrazine benomyl, butachlor, butylate, captan, carbaryl, carbendazim, carbofuran, 2,4-D, 1,3-dichloropropene, dinoseb, MCPA, metolachlor, metribuzin, PCP, picloram, propachlor, terbufos, thiabendazole, thiophanate-methyl.

Kit Format

Pyrethroid ELISA Kit (Magnetic Particle format, 100T) PN 500201

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