

ENVIROLOGIX Inc. - Environmental & Food Monitoring Kits: Pesticides

CHOLINESTERASE SCREEN (ELISA Kit)

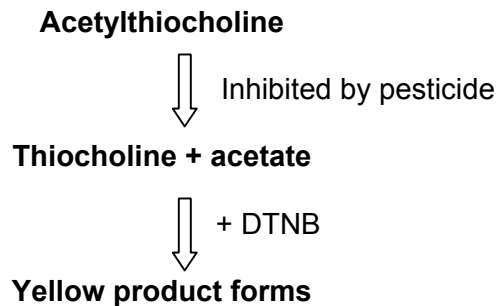
● Intended use

The Envirologix Cholinesterase Screening Test Is Intended As A Screening Test For The Detection Of Organophosphate Or Carbamate Residues In A Variety Of Matrices. The Test Kit Can Be Used In The Laboratory Without Extensive Training.

● General

The Cholinesterase Screening Test is based on the use of an enzyme isolated from insect head. A wide range of organophosphate and carbamate insecticides sensitively inhibits this enzyme. Many "organophosphates" are actually phosphorothioate "pro-insecticides" and require oxidation to the insecticidally active "oxon" form for optimal detection sensitivity. In the absence of appropriate pesticide in the test sample, action of cholinesterase on its acetylthiocholine substrate releases thiocholine which reacts with Ellman's reagent (5,5'- dithio-bis-(2-nitrobenzoate), DTNB) to form a bright yellow product. Inhibition of cholinesterase by pesticide in the sample leads to a decrease in color development.

Action of cholinesterase



1. The sample extract or pesticide standard is added to a microwell, followed by oxidizing reagent.
2. After 5 minutes, excess oxidizing agent is inactivated using the neutralizing reagent.
3. Cholinesterase enzyme is added, and mixed 30 min at room temperature.
4. Substrate and chromogen are then added and incubated 15 min. In the presence of active cholinesterase, color developer turns yellow.
5. Color development is stopped by addition of cholinesterase stopping agent.

Since the same concentration of cholinesterase is added to every microwell, a sample which contains no organophosphate or carbamate pesticide enables the cholinesterase to act on the added enzyme substrate present in the color developer. Therefore, in the absence of organophosphate or carbamate a dark yellow colour forms. Significant levels of the pesticides will inhibit the action of the enzyme, resulting in a paler yellow sample.

Materials Provided:	Materials Required But Not Provided:
<ul style="list-style-type: none"> - 1 x Uncoated Microwell Plate. - 1 x Vial Cholinesterase Oxidizing Agent concentrate (Reagent 1). - 1 x Vial Cholinesterase Oxidizing Agent diluent (Reagent 2). - 1 x Bottle Cholinesterase Microwell Solution (Reagent A). - 1 x Vial Cholinesterase Neutralizing Agent (Reagent C). - 1 x Vial Cholinesterase Enzyme (Reagent D). - 1 x Vial Cholinesterase Substrate (Reagent E). - 1 x Vial Cholinesterase Chromogen (Reagent F). - 1 x Vial Cholinesterase Stopping Solution (Reagent G). <p>These reagents not supplied in all kits:</p> <ul style="list-style-type: none"> - 1 x Vial Negative Control - (Reagent H). - 1 x Vial Pesticide Control I - (Low Level) (Reagent I). - 1 x Vial, Labeled Pesticide control II - (High Level) (Reagent J). 	<ul style="list-style-type: none"> - Application Sheet pertaining to sample type. - Microplate Reader. - Microwell Plate Mixer (optional). - Test Tube for diluting oxidizing agent. - Automatic Pipettes (1-20, 20-200, 200-1000, 1000-5000 µL). - 12-Channel Pipette (20-200 µL). - Marking Pens for labeling. - Timer or wristwatch.

Kit Specifications:

Plate Format:	- 96 Well.
Time Requirement:	- 2 h 10 min.
Detection Limit:	- 0.1 ppm (malathion).
Cross Reaction:	- Acephate (>100,000 ppb).
(Limit of Detection)	- Azinphos-Ethyl (5 ppb).
	- Azinphos-Methyl (50 ppb).
	- Chlorfenvinphos (100 ppb).
	- Chlorpyrifos (0.5 ppb).
	- Chlorpyrifos-Methyl (0.5 ppb).
	- Coumaphos (5 ppb).
	- Diazinon (10 ppb).
	- Dichlorvos (5 ppb).
	- Dimethoate (50,000 ppb).
	- Ethion (1000 ppb).
	- Fenitrothion (200 ppb).
	- Malathion (100 ppb).
	- Methacrifos (500 ppb).
	- Methamidophos (500 ppb).
	- Methidathion (50 ppb).
	- Mevinphos (50 ppb).
	- Parathion (500 ppb).
	- Parathion-methyl (500 ppb).
	- Phorate (500 ppb).
	- Phosmet (50 ppb).
	- Pirimiphos-Ethyl (50 ppb).
	- Pirimiphos-Methyl (50 ppb).
	- Propetamphos (>1000 ppb).
	- Quinalphos (5 ppb).
	- Triazophos (0.5 ppb).
	- Carbaryl (1000 ppb).
	- Carbofuran (100 ppb).

Measurement:
Product ID #:

- Microtiter Plate Reader or strip reader.
- EP 014.