

KACEY™
OPS'
ORGANO-PHOSPHATE (OPs) & CARBAMATES (CMs)
INSECTICIDE / PESTICIDE (I/P) POISON TEST

SUMMARY & INTENDED USE

The KACEY™ OPS' Pet Stx Strips are intended to provide a quantitative measurement of CHOLINESTERASE in a plasma sample. Cholinesterase is one of many enzymes needed for the proper functioning of the nervous system in animals. Certain chemical classes of pesticides, such as Ops' and CMs' work against undesirable insects by interfering with, or inhibiting cholinesterase. While the effects of cholinesterase inhibiting products are intended for insect pests, these chemicals can be poisonous to animals in some situations. Electrical switches called "synapse" are found throughout the nervous system of the animal. Muscles, glands, and nerve fibers are called "neurons" are inhibited by the constant firing of signals across these synapse. Stimulating signals are usually carried by chemical called 'acetylcholine'. Stimulates signals are discontinued by a specific type of cholinesterase enzyme acetyl cholinesterase, which breaks down the acetylcholine. These important chemical reactions are usually going on all the time at a very fast rate, with acetylcholine causing stimulation and acetyl cholinesterase ending the signal for stimulation. If cholinesterase affecting insecticides are present in the synapse this situation is thrown out of balance. The presence of cholinesterase inhibiting chemicals prevents the breakdown of acetylcholine. Acetylcholine can then build up, causing a "jam" in the nervous system of the animal. Thus, an animal that receives to great an exposure to cholinesterase inhibiting compounds, the animal's body is unable to break down the acetylcholine. The animals acetyl cholinesterase is unable to breakdown or remove the acetylcholine, the muscle can continue to move uncontrollably

THE MORE CHOLINESTERASE LEVELS DECREASE MORE LIKELY SYMPTOMS OF POISONING CHOLINESTERASE INHIBITING PRODUCTS ARE PRESENT.

SIGNS & SYMPTOMS OF CHOLINESTERASE INHIBITING FROM EXPOSURE TO OPs & CMs INCLUDE THE FOLLOWING:

- a. Mild cases - Within 4-24 hours of contact Weakness, Dizziness, Nausea Blurred Vision, Tiredness, Stumbling
- b. Moderate cases within 4-24 hours of Contact- Drooling, vomiting, twitching and some of the above
- c. Severe Cases- after continued daily absorption - diarrhea, muscular tremors, staggering gait, breathing difficulty, small pin Point like pupils, controllable urinating, and slow heartbeat

SEE LAST SECTION OF INSERT FOR LISTING OF THE OPs' COMPOUNDS THAT CAN INHIBIT CHOLINESTERASE PRODUCTION

The KACEY™ OPS' Pet Stx Test Strips measurements are used in the diagnosis and treatment of Insecticide /Pesticide poisoning (aka. ORGANO-PHOSPHATE POISON). Organophosphate is a toxic chemical that can be found in many commonly used Insecticides & Pesticide products . Measurements of the cholinesterase activity in plasma is an inexpensive and quick screening test that is indicated for animals which have been exposed to organophosphate or carbamate compounds and / or show compatibility with exposure. Plasma Cholinesterase activity below the reference interval is consistent with exposure to cholinesterase inhibiting compounds, including organophosphate and carbamate insecticides. Cholinesterase activity within the reference interval does not rule out exposure to organophosphate or carbamate insecticides since the range of the activity within a species is so broad that an individual animal may have significant reduction of its pre-exposure activity and still be within the reference interval. Cholinesterase activity above the reference interval has no know significance. Hemolytic can increase cholinesterase activity in plasma samples by releasing of cholinesterase from ruptured red blood cells.

CHEMICAL COMPOSITION

Each KACEY™ OPS' Pet Stx contains the following active ingredients:
REAGENT #1 Acetylcholine chloride: 0.049 mg
REAGENT #2 Choline oxidase: > 0.15 IU
REAGENT #3 Peroxidase: > 1.7 IU

STORAGE & HANDLING

Store in a cool dry place and keep away from heat and direct sunlight .Always replace vial caps immediately after removing the Pet Stx Test Strip from the bottle.

The KACEY™ OPS' Pet Stx™ measure the activities of Cholinestrse in a PLASMA SAMPLE. A drop of Plasma (20 uL) is placed in the circular opening in the OPs' Pet Stx strip. After waiting the required SIX (6) minutes for the color to form in the Pet Stx Strips color is compared to a color chart on the bottle to determine both the presence and activity of the Cholinesterase. Replace vial caps immediately after removing a test strip or dispensing working solution reagents.

A PLASMA SAMPLE IS REQUIRED - DO NOT USE WHOLE BLOOD FOR THIS TEST

HEMOLYZED SAMPLES SHOULD NOT BE USED FOR TESTING DUE TO THE RELEASE OF CHOLINESTERASE INTO THE PLASMA FROM THE RUPTURED RED BLOOD CELLS. HEMOLYZED SAMPLES WILL RENDER ERRONEOUS RESULTS.

PROCEDURE

1. PLACE A MINIMUM OF 300-750 uL OF WHOLE BLOOD INTO A GREEN TOP LITHIUM, HEPARIN TUBE. PLACE THE TUBE IN A CENTRIFUGE AND SPIN THE TUBE FOR 3-5 MINUTES TO SEPARATE THE PLASMA FROM THE RED BLOOD CELLS. (USE ONLY NON-HEMOLYZED PLASMA TO PERFORM THE TEST)
 2. PLACE THE OPS' Pet Stx STRIP HANDLE ON A PLATFORM (HANG IT OVER THE BOTTLE- LIKE A DIVING BOARD) DO NOT LET THE BACK OF REAGENT PAD TOUCH ANY SURFACE)
 3. PLACE ONE DROP OF PLASMA FROM THE ABOVE CENTRIFUGED TUBE (20 uL) INTO THE INDENTED CIRCLE OF THE Pet Stx STRIP (A 20 uL PIPETOR & PIPET TIPS ARE AVAILABLE FROM KACEY™)
 4. WAIT SIX (6) MINUTES AND COMPARE THE COLOR IN THE CIRCLE OF THE Pet Stx TO THE COLOR CHART PROVIDED ON THE BOTTLE
- READ THE COLOR ON THE Pet Stx AT EXACTLY 6 MINUTES AS COLORS OF DIFFERENT LEVELS WILL BECOME DARKER AND COULD YIELD AN ERRONEOUS RESULT

LIMITATION OF THE PROCEDURE

Tests have to be performed at 20-28 °C, since the test results are sensitive to temperature.

EXPECTED VALUES

Specie	Estimated Normal Range	Expected Value*
FELINE	Negative Results are at or above 75 U/dl units (75 U/dl are at the Lowest Normal Threshold Level)	
CANINE	Negative Results are at or above 125 U/dl units (125 U/dl are at the Lowest Normal Threshold Level)	

Measuring range: The Ops' Poison Pet Stx is Linear from 0-200 U/dl

The Kacey OPs' Pet Stx test performed well when compared to the same samples tested and the results compared from a Hitachi 911.

The sample range tested on spiked samples were from 0, 25, 75, 100, 125, 175, 200 U/dl. Recovery was excellent from 0-200U/dl

LIST OF THE MOST COMMON ORGANOPHOSPHATES (Ops)

Orthene Aspon Guthion Furadan Trithion Birlane Dursban Lorsban Co-Ral Ciodrin Ruelene
Systox Specticide DDVP Bidrin Cygon Delnav Di-Syston EPN Ethion Mocap Famphur
Nemacur Sumthion Dasanti Baytex Dyfonate Aftanol Cythion Monitor Supracide Methyl-Parathion
Phosdrin Monocrotophos Dibron Meta-sytox-R Niran Thimet Zolone Irndian Dimecron Abate
TEPP Counter Rabon Dyllox

LIST OF THE MOST COMMON CARBAMATES

TEMIK FICAM BUFENCARB SEVIN FURADAN CARZOL
MESUROL LANNATE VYDATE PIRIMOR BAYGON

BIBLIOGRAPHY

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2. Editor. W.B. Saunders Company, Philadelphia 19910140
3. Young, D>L> ET. AL., Effects of Drugs on Clinical Laboratory tests, AACC Press Wash., D.C. 19903
4. Data on file, Kacey Inc. Asheville, N.C. 28803

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REORDER # KCOP-5 FIVE TESTS PER BOTTLE REV # 1