Version 14-04/24

User's Manual

Fenproporex ELISA Kit

REF **DEIASL526**

Σ **96T**

RUO

This product is for research use only and is not intended for diagnostic use.

For illustrative purposes only. To perform the assay the instructions for use provided with the kit have to be used.

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PRODUCT INFORMATION

Intended Use

For the determination of trace quantities of Fenproporex in human samples.

Principles of Testing

The ELISA is a solid phase immunoassay designed to detect drugs of abuse for forensic application. The test is performed in microwells coated with a high affinity capture antibody. A control or sample is added to the wells followed by an enzyme conjugate. During the following incubation period, the enzyme conjugate competes with the drug in the sample for binding sites on the antibody coated well. After a wash step to remove any unbound material, substrate is added for the color development process. Acid stop solution is added to discontinue the enzyme-substrate reaction. The color intensity is inversely proportional to the amount of drug present in the sample. Therefore, those samples which contain the drug will inhibit binding of the enzyme conjugate to the capture antibody resulting in less color than the negative control. Negative and positive controls should be run along with the samples. Results should be obtained by reading the absorbance of the wells with a microplate reader.

Reagents And Materials Provided

1. Wash Buffer Concentrate (10X): 20 mL. Phosphate buffered saline solution with a surfactant. Dilute 10 fold with deionized or ultrapure water before use. Diluted wash buffer is used to wash all unbound conjugate and samples from the plate after the conjugate incubation.
2. K-Blue® Substrate: 20 mL (ready-to-use). Stabilized 3,3',5,5' Tetramethylbenzidine (TMB) plus Hydrogen Peroxide (H_2O_2) in a single bottle. It is used to develop the color in the wells after washing. Light-sensitive.
3. Drug-Enzyme Conjugate: 200 µL. Drug-horseradish peroxidase conjugate. Dilute 100X before use.
4. Drug-Enzyme Diluent: 15 mL.
5. Acid Stop Solution: 18 mL of 1N H_2SO_4.
6. Antibody-coated Plate: 96 well plate coated with anti-drug antiserum. The plate is ready for use. Do not wash.

Materials Required But Not Supplied

1. Precision pipettes that range from 10 uL - 1000 uL and disposable tips.
2. Graduated cylinder to dilute and mix wash buffer.
3. Clean glassware (i.e. test tubes).
4. Microplate reader capable of measuring absorbance at 450 nm (650 nm, 630 nm, or 620 nm wavelength reference filter).
5. Deionized water

Storage

This kit can be used until the expiration date on the label and Certificate of Analysis when stored refrigerated between 2 - 8°C. Always check each kit for specific expiration dates and storage requirements.

Specimen Collection And Preparation

Recommended minimum sample dilutions are listed below. These dilutions may change based on your laboratory's determination. All sample dilutions should be made in CD's EIA Buffer.

a. Urine: A dilution of 1:50 (i.e. 1 part sample to 49 parts provided EIA buffer) is required for optimal assay performance at a 100 ng/mL cutoff. Please contact your Representative for assistance.

b. Whole blood: A dilution of 1:5 (i.e. 1 part sample to 4 parts provided EIA Buffer) is required for optimal assay performance at a 10 ng/mL cutoff. Alternatively, whole blood may be diluted 1:20 (i.e. 1 part sample to 19 parts provided EIA buffer). If whole blood is diluted 1:20, the recommended cutoff is 50 ng/mL. Please contact your Representative for assistance.

c. Oral Fluid: A dilution of 1:5 (i.e. 1 part sample to 4 parts provided EIA Buffer) is required for optimal assay performance at a 5 ng/mL cutoff. A centrifugation step may be used to spin down the particulate matter prior to dilution. Please contact your Representative for assistance.

d. Other Forensic sample types: Please contact your Representative for assistance.

Reagent Preparation

ENZYME PREPARATION

1. Prior to use, perform a 100X dilution of the drug-enzyme conjugate using the provided drug-enzyme diluent. The drug-enzyme conjugate is most stable in its concentrated form. Dilute only the volume necessary for the amount of strips currently being used. For example:

# of plates	Volume of Conjugate	Volume of Drug-Enzyme Diluent
1	140 µL	13.86 mL
5	700 µL	69.3 mL
25	3.5 mL	346.5 mL

2. Gently mix the diluted drug-enzyme conjugate solution by inverting 10-15 times. Do not vortex. Store unused conjugate at 4°C.

Assay Procedure

Procedure Notes

1. Desiccant bag must remain in the zip-lock with unused strips. Keep zipped bag sealed when not in use to maintain a dry environment.
2. Use clean pipette tips for the buffer, drug-enzyme conjugate, controls and samples.
3. Before pipetting a reagent, rinse the pipette tip three times with that reagent.
4. When pipetting into the wells, DO NOT allow the pipette tip to touch the inside of the well or any of the reagent already inside the well. This may result in cross contamination.
5. Controls and samples should be assayed in duplicate.
6. Before opening the drug-enzyme conjugate vial, tap the vial in an upright position to remove any liquid in the cap.

7. Before substrate addition, wipe the outside bottom of the wells with a lint-free wiper to remove dust and fingerprints.
8. Gently mix specimens and reagents before use. Avoid vigorous agitation.

Test Procedure

1. Determine the number of wells and amount of reagents that will be required for immediate testing.
2. All ELISA components, controls, and samples must be at room temperature prior to use. Mix reagents by gentle inversion of bottles.
3. Pipette 10 µL of standards, controls, and samples into wells. Alternate Testing Procedure: 20µL of standards, controls, and samples may be substituted for the above step if desired by the testing laboratory. Please contact Technical Support for assistance if needed.
4. Add 100 µL of the diluted enzyme (refer to Enzyme Preparation) to each well.
5. Allow the reaction to incubate at room temperature for 30 minutes.
6. Once the incubation is complete, dump or aspirate the liquid from the wells. Tap the plate on a clean lint-free towel to remove any remaining liquid in the wells.
7. Wash each well with 300 µL of diluted wash buffer. Manual Wash: For manual wash procedures repeat for a total of 3 washings, invert and tap dry the plate following each step. After completing the last wash step wipe the bottom of the wells with a lint-free towel to remove any liquid on the outside of the wells. Automated Wash: If an automated plate washer is used wash the plate for a total of 5 washings with 300 µL of diluted wash buffer. It is important for the automated washer to conduct a final aspirate cycle to eliminate residual amounts of wash buffer. Residual amounts of buffer in the wells will affect assay performance. Note: DI water should never be used for the plate wash.
8. Proceed immediately to add 100 µL of the K-Blue Substrate to each well. Ensure that the outside bottoms of the wells are clean and dry.
9. Allow the substrate to incubate for 15 minutes. We recommends gentle agitation during this time, preferably on a plate shaker.
10. Stop the reaction by adding 100 µL of Acid Stop Solution to each well.
11. Measure the absorbance at a wavelength of 450 nm.

Interpretation Of Results

Each laboratory should determine the cutoff level for their individual application. When possible, cutoff calibrators and/or standards should be prepared in the same matrix being tested.

Positive Result: Samples with an absorbance less than or equal to the laboratory's designated cutoff calibrator should be considered positive. All positive samples should be confirmed by a quantitative method such as GC/MS.

Negative Result: Samples with an absorbance greater than the laboratory's designated cutoff calibrator should be considered negative.

Note: The kit was designed for screening purposes only. It is recommended that all suspect samples be confirmed by a quantitative method such as GC/MS or HPLC.

Specificity

Compound	Compound Concentration (ng/mL)	Fenproporex Equivalents (ng/mL)	% Cross Reactivity
Fenproporex	7.70	7.70	100%
(±)-MDEA	1750	7.70	0.44%
Fenfluramine	1800	7.70	0.43%
(±)-N-Desmethylselegiline	8000	7.70	0.09%
ßκ-MDEA (Ethylone)	8000	7.70	0.09%

Note: Fenproporex equivalents represent 50% B/B0 assay displacement in BPS Buffer

Precautions

1. DO NOT use kits or components beyond expiration date.
2. DO NOT mix conjugates and plates from different kit lots.
3. DO NOT pipette reagents by mouth.
4. Pour K-Blue Substrate out of the bottle into a clean reservoir. To prevent contamination of the substrate, DO NOT pipette out of the bottle.
5. All specimens should be considered potentially infectious. Exercise proper handling precautions.
6. Keep plate covered except when adding reagents, washing or reading.
7. Kit components should be refrigerated at all times when not in use.
8. Use aseptic technique when opening and removing reagents from vials and bottles.
9. DO NOT smoke, eat or drink in areas where specimens or reagents are being handled.
10. Do not substitute DI water for the wash step of this protocol. Use only Creative Diagnostic's wash buffer.
11. Do not use Sodium Azide with samples, standards and/or calibrators.
12. Do not reuse wells, they are for one-time use only.