



CATACHEM

NONESTERIFIED FATTY ACIDS (NEFA)

PRODUCT / SERVICE INFORMATION

Catachem, Inc. Introduces the Nonesterified Fatty Acids (NEFA) In-Vitro Diagnostic (IVD) Chemistry Reagent Kit.

Catachem introduces the VetSpec™ Nonesterified Fatty Acids (NEFA) In-Vitro Diagnostic Chemistry reagent test kit. Catachem is pleased to announce the introduction of our new reagent system with calibrator and controls.

Most previously used procedures for Nonesterified Fatty Acids were based on organic solvent extractions, titration and gas liquid chromatography. These procedures are complicated, time consuming and restricted to manual assays. Catachem's NEFA procedure is based on the enzymatic synthesis of thiols esters of CoA, known as Acyl-CoA by the activity of Acyl-CoA Synthetase (ACS) in the presence of ATP and CoA. The Acyl-CoA thus formed is then oxidized in a second reaction by Acyl-CoA oxidase (ACOX) to produce 2,3-trans-enoyl-CoA and hydrogen peroxide. The hydrogen peroxide is then quantitated by the oxidative condensation of N-Ethyl-(3-sulfopropyl) aniline (ALPS) with 4-aminoantipyrine to produce a quinoneindamine dye with maximum absorption at 550nm. The increase in absorbance is directly proportional to the concentration of NEFA in the original serum sample.

Interfering Substances

The following substances have no significant effect on the accuracy of this NEFA procedure at the concentrations stated.

Hemoglobin	≤ 200 mg/dl
Bilirubin	≤10.0 mg
Ascorbic Acid	≤ 20 mg/dl

Other substances and certain drugs are also known to influence the NEFA values.

Method Performance Characteristics

Sensitivity: Using a pathlength of 1 cm, a Δ-absorbance of 0.1-0.20 per mmol/L should be obtained.

Linearity: This procedure is linear over the range of 0-2.5 mmol/L.

Precision: Precision data was obtained using five levels of protein based controls and following the NCCLS EP5-T2 procedure. The following results were observed:

ACCURACY

Using an automated analyzer, correlation studies were carried out between this Catachem NEFA procedure (Y) and a commercially available NEFA test kit as reference (X). Serum samples were assayed and the results compared by the least squares regression. The following statistics were observed:

NEFA	Regression
Range	0.10-2.3 mmol/L
Mean of Y	05295 mmol/L
Mean of X	0.5841mmol/L
Linear Equation	X = 0.91841-0.0042
r	0.9949
Sy.x	0.0541

NEFA	Precision	
Mean	SD	CV
mmol/L	mmol/L	%
0.169	0.0060	3.356
0.443	0.0087	1.953
1.02	0.0149	1.461
1.516	0.0163	1.078