respons®910 vet

NEFA FS*

In-vitro-Diagnostic for veterinary use only

Diagnostic reagent for quantitative in vitro determination of non-esterified fatty acids (NEFA) in serum or plasma on DiaSys respons®910 VET

Order Information

Cat. No. 1 5781 99 11 921
4 twin containers for 120 tests each

Method

Enzymatic endpoint method

Principle

Non-esterified fatty acids and coenzyme A react in the presence of acyl coenzym A synthetase (ACS) to acylated coenzyme A. Acylated coenzyme A is oxidized by acyl coenzyme A oxidase under development of H_2O_2. is converted to a coloured product by the use of Trinder substances in the presence of peroxidase (POD).

Non-esterified fatty acids + Coenzym A + ATP $\xrightarrow{ACS}$ Acyl-Co A + AMP + PP_i

Acyl-Co A + O_2 $\xrightarrow{ACOD}$ 2,3-trans Enoyl CoA + H_2O_2

2 H_2O_2 + Trinder $\xrightarrow{POD}$ Dye + 4 H_2O

At 546 nm the intensity of the red dye is directly proportional to the concentration of free fatty acids in the sample.

Reagents

Components and Concentrations

R1:	Goods buffer	pH 7.0	50 mmol/L
	Coenzyme A		0.4 g/L
	ATP		2 mmol/L
	Acyl CoA synthetase (ACS)		0.4 kU/L
	$MgCl_2$		2 mmol/L
R2:	Goods buffer	pH 7.0	50 mmol/L
	Acyl CoA oxidase (ACOD)		30 kU/L
	Peroxidase (POD)		45 kU/L

Storage Instructions and Reagent Stability

The reagents are stable up to the end of the indicated month of expiry, if stored at 35.6 – 46.4°F, protected from light and contamination is avoided. DiaSys respons containers provide protection from light. Do not freeze reagents!

Warnings and Precautions

1. Reagent 1 and reagent 2: Warning. H319 Causes serious eye irritation. P280 Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 If eye irritation persists: Get medical advice/attention.
2. In very rare cases, samples of animals with gammopathy might give falsified results.
3. N-acetylcysteine (NAC), acetaminophen and metamizole medication leads to falsely low results.
4. Please refer to the safety data sheets and take the necessary precautions for the use of laboratory reagents. For diagnostic purposes, the results should always be assessed with the animal`s medical history, clinical examinations and other findings.
5. For professional use only!

Waste Management

Please refer to local legal requirements.

Reagent Preparation

The reagents are ready to use. The bottles are placed directly onto the reagent trays.

Specimen

Serum, heparin plasma or EDTA plasma (fasting > 12h)
Samples from animals under heparin therapy are unsuitable for analysis. Effect the measurement immediately after blood collection because concentration of non-esterified fatty acids in serum increases due to lipolysis. Discard contaminated specimens.

Calibrators and Controls

For calibration, the DiaSys TruCal Lipid is recommended. The assigned values of the calibrator are traceable to a primary standard material. For internal quality control DiaSys TruLab L control should be assayed. Each laboratory should establish corrective action in case of deviations in control recovery.

	Cat. No.	Kit size
TruCal Lipid	1 3570 99 11 045	3 X 2 mL
TruLab L Level 1	5 9020 99 11 065	3 x 3 mL
TruLab L Level 2	5 9030 99 11 065	3 x 3 mL

Performance Characteristics

The performance characteristics were evaluated with human samples and might differ from results obtained with various animal specimen.

Measuring range up to 3 mmol/L (84.7 mg/dL) NEFA (in case of higher concentrations re-measure samples after manual dilution with NaCl solution (9 g/L) or use rerun function).	
Limit of detection**	0.02 mmol/L (0.565 mg/dL) NEFA
On-board stability	21 days
Calibration stability	7 days

Interfering substance	**Interferences < 10%**	**NEFA [mmol/L]**
Ascorbate	up to 30 mg/dL	0.910
Hemoglobin	up to 120 mg/dL	0.600
	up to 180 mg/dL	0.960
Bilirubin, conjugated	up to 60 mg/dL	0.620
	up to 60 mg/dL	1.28
Bilirubin, unconjugated	up to 70 mg/dL	0.550
	up to 70 mg/dL	0.930
Lipemia (triglycerides)	up to 250 mg/dL	0.540
	up to 2000 mg/dL	0.890
For further information on interfering substances refer to Young DS. Effects of Drugs on Clinical Laboratory Tests. 5th. ed. Volume 1 and 2. Washington, DC: The American Association for Clinical Chemistry Press, 2000.		

** according to NCCLS document EP17-A, vol. 24, no. 34

Conversion Factor

Non-esterified fatty acids [mg/dL] x 0.0354 =
Non-esterified fatty acids [mmol/L]

Reference Range

			
DOG	**CAT**	**CATTLE**	**Unit**
0.25 – 1.65	**0.19 – 1.20**	**0.10 – 0.79**	**mmol/L**

Source:
Reference ranges have been validated by DiaSys USA according to National Reference Laboratory standards.

Plasma concentrations of non-esterified fatty acids are subject to individual fluctuations and in particular increased after food intake.

Each laboratory should check if the reference ranges are transferable to its own animal population and determine own reference ranges if necessary.

Manufacturer

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