**Reactivos GPL**

**Barcelona, España**

CE

**- Total Lipids -**

# TOTAL LIPIDS

Sulpho-phosphovainilline. Colorimetric

*Store at: +2+8ºC.*

*Presentation:*
*Cod. SU028* CONT: *R 2 x 125 mL.+ CAL 1 x 5 mL.*

## Procedure

***Quantitative determination of total lipids.***

**Only for *in vitro use in clinical laboratory* (IVD)**

***TEST SUMMARY***

Unsaturated lipids react with sulphuric acid to form carbonium ions.
In a second step the carbonium ions react with phosphovainilline to give a pink colour.
The intensity of the color formed is proportional to the total lipids concentration in the sample[1,2].

***REAGENTS COMPOSITION***

| | | |
|---|---|---|
| **R** | Phosphovainilline | 235mmol/L. |
| **Calibrator** | Total Lipids aqueous primary standard | 750 mg/dL. |
| **Additional Reagent:** Sulphuric acid p.a. (Not included) | | |

***PRECAUTIONS***

R: H314-Causes severe burns and eye damage. Follow the precautionary statements given in MSDS and label of the product.

***REAGENT PREPARATION AND STABILITY***

Reagent and standard are ready to use.
All the components of the kit are stable until the expiration date on the label when stored at 2-8ºC, protected from light and contamination prevented during their use.
Do not use reagents over the expiration date.
**Signs of Reagent deterioration**:
- Presence of particles and turbidity.
- Blank absorbance (A) at 520 nm. ≥ 0.32

***All the reagents of the kit are stable up to the end of the indicated month and year of expiry. Stored at tightly closed at 2-8ºC. Do not use reagents over the expiration date.***

***SPECIMEN***

Serum or heparinized plasma[1,2]:
Stability of the sample: 3 days at refrigerator (2-8ºC) or 24 hours at room temperature (15-25ºC.)

***MATERIAL REQUIRED BUT NOT PROVIDED***

- Spectrophotometer or colorimeter measuring at 520 nm.
- Matched cuvettes 1.0 cm. light path.

***General laboratory equipment.***

***TEST PROCEDURE***

1. Assay Conditions
   - Wavelenght : ..... 520 (490-550) nm.
   - Cuvette: ..... 1 cm light path.
   - Temperature .....37ºC.
2. Adjust the instrument to zero with distilled water.
3. Pipette into a cuvette:

| | Standard | Sample |
|---|---|---|
| $H_2SO_4$ (mL) | 2.5 | 2.5 |
| Standard (Note 1-2) (µL) | 100 | -- |
| Sample (µL) | -- | 100 |

4. Shake thoroughly using a mechanical stirrer.
5. Incubate for 10 minutes in a boiling water bath (100ºC).
6. Cool in iced water and transfer into a cuvette:

| | Blank | Standard | Sample |
|---|---|---|---|
| R (mL) | 1.0 | 1.0 | 1.0 |
| Sample Acid digest (µL) | -- | -- | 50 |
| Calibrator Acid digest (µL) | -- | 50 | -- |

7. Shake thoroughly using a mechanical stirrer.
8. Incubate for 15 minutes at 37ºC.
9. Read the absorbance (A) of the samples and calibrator, against the Blank. The colour is stable for at least 1 hour.

***CALCULATIONS***

$$\text{Total Lipids (mg/dL.)} = \frac{(A)\,\text{Sample}}{(A)\,\text{Standard}} \times 750\ \text{(Calibrator conc.)}$$

***QUALITY CONTROL***

Control sera are recommended to monitor the performance of the procedure, Control H Normal Ref. QC003 and Control H Pathological Ref. QC004. If control values are found outside the defined range, check the instrument, reagents and calibrator for problems.

***Serum controls are recommended for internal quality control. Each laboratory should establish its own Quality Control scheme and corrective actions***

***REFERENCE VALUES[1]***

Serum or plasma: 450 to 800 mg/dL.
*(These values are for orientation purpose).*

***It is suggested that each laboratory establish its own reference range.***

***CLINICAL SIGNIFICANCE***

The lipids are organic compounds whose more important function is the one to act like fuel.
They have an extraordinary yield, favored by the possibility of storing itself in remarkable amounts like fatty weave. Other functions: they are constituent of biological membranes, form protective fatty structures of the internal organs; provide important compounds in the formation with diverse hormones.
Great part of the interest in the study of the increase of these compounds must to the connection between hyperlipemia and arteriosclerosis, diabetes and cardiac disease[5,6].
Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

***REAGENT PERFORMANCE***

– *Measuring Range*:
From detection limit 0f 7.7 mg/dL. to linearity limit of 1500 mg/dL., under the described assay conditions.
If results obtained were greater than linearity limit, dilute the sample ½ with NaCl 9 g/L. and multiply result by 2.

– *Precision*:

| | Intra-assay n= 20 | | Inter-assay n= 20 | |
|---|---|---|---|---|
| Mean (mg/dL) | 555 | 919 | 553 | 919 |
| SD | 15.9 | 6.47 | 7.62 | 5.87 |
| CV % | 2.87 | 0.70 | 1.78 | 0.63 |

- *Sensitivity:*
1 mg/dL. = 0.00066A
- *Accuracy:*
Results obtained GPL(y) reagents did not show systematic differences when compared with other commercial reagents (x).
The results obtained using 50 samples were the following:
Correlation coefficient (r): 0.984
Regression equation: y=0.967x + 24.08
The results of the performance characteristics depend on the analyzer used.

***INTERFERING SUBSTANCES***

A list of drugs and other substances that could interfere has been reported by Young et. Al[3,4].

***NOTES***

1. TOTAL LIPIDS CAL: Proceed carefully with this product because due its nature it can get contaminated easily.
2. Calibration with the aqueous standard may cause a systematic error in automatic procedures. In these cases, it is recommended to use a serum Calibrator.
3. Use clean disposable pipette tips for its dispensation.

***BIBLIOGRAPHY***


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*GPLBSDTT027-I*
*Rev. 01/2017*