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## LIPASE

BC9903-01(50Tests/48Samples)

**FOR RESEARCH USE ONLY, DO NOT USE IT IN CLINICAL DIAGNOSIS**

## Product Description

Lipase is a pancreatic enzyme necessary for the absorption and digestion of nutrients that catalyses the hydrolysis of glycerol esters of fatty acids. Determination of lipase is used for diagnosis of diseases such as acute and chronic pancreatitis and obstruction of the pancreatic duct. Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

In the presence of colipase and bile acids lipase splits the synthetic substrate (1, 2- O-Dilauryl-rac-glycero-3-glutaricacid (6-methyl-resorufin-ester) to glycerol and methylresorufin-ester, which is spontaneously degraded to glutaric acid and methylresorufin. The rate of methylresorufin formation, measured photometrically is proportional to the catalytic concentration of lipase present in the sample.

Wavelength of absorbance is 580nm

## Kit components

| Reagent/<br>Component | Volume   | Storage            |
|-----------------------|----------|--------------------|
| Extraction Reagent    | 1×60mL   | 2-8 <sup>0</sup> C |
| Lipase(S.L) R1        | 2 x 10mL | 2-8 <sup>0</sup> C |
| Lipase(S.L) R2        | 1 x 5mL  | 2-8 <sup>0</sup> C |
| Lipase Calibrator     | 1 x 3mL  | 2-8 <sup>0</sup> C |

## Open Vial Stability

Once opened, the reagent is stable up to 4 weeks at 2-8<sup>0</sup>C, if contamination is avoided.

## Reagent Deterioration

Turbidity or precipitation in any kit component indicates deterioration and the component must be discarded. Values outside the recommended acceptable range for the Qualicheck Norm & Path control may also be an indication of reagent instability and associated results are invalid. Sample should be retested using a fresh vial of reagent.

## Reagent Preparation

Reagent 1 & 2 are ready to use.

Calibrator: Reconstitute with 3mL of distilled water. Dissolve the content of the vial by swirling gently to avoid the formation of foam.

Reconstituted calibrator is stable only for 7 days at 2-8<sup>0</sup>C and 3 months at -20<sup>0</sup>C.

## Precaution

- To avoid contamination, use clean laboratory wares. Use clean, dry disposable pipette tips for dispensing. Close reagent bottles immediately after use.
- Avoid direct exposure of reagent to light. Do not blow into the reagent bottles.
- This reagent is only for IVD use and follow the normal precautions required for handling all laboratory reagents.

## Operation Procedures

### Sample Preparation

#### 1. Bacteria or cells

Harvest the cells and wash twice with PBS. Ideal touse5millioncellsfortheassay. Add 1mL Extraction Reagent to 5 million cells and ultrasonicate (200W, work time 3 second / interval 10 second repeat for 30 times) for complete lysis. Perform ultrasonication while keeping the cells in ice bath. Centrifuge at 8000 rpm, 4°C for 10 minutes and collect the supernatant. The supernatant should be kept on ice.

Note: Ideal proportion of Cells/Bacteria to Extraction Reagent is 1:5-10.

#### 2. Tissue

Prepare 10% tissue homogenate by adding 1mL Extraction Reagent to 0.1g tissue. Grind completely to make a homogenate. Centrifuge at 8000 rpm, 4°C for 10 minutes and collect the supernatant.

#### 3. Serum or Plasma

Directly use for the assay.

## Interferences

No interference for

Bilirubin up to 20 mg/dL

Haemoglobin up to 1000 mg/dL

## Materials Required but Not Provided

Pipettes & Tips, Test Tubes & racks, Timer, Incubator, Analyzer

## Unit Conversion

| Traditional Unit | SI Unit | Conversion from Traditional to SI |
|------------------|---------|-----------------------------------|
| U/L              | μKat/L  | x 0.017                           |

## Procedure Notes

| Laboratory procedure for Semi Auto Analyzer                                                                                                                |        |            |                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|----------------|
| Reagent                                                                                                                                                    | Blank  | Calibrator | Sample/control |
| Reagent 1                                                                                                                                                  | 1000mL | 1000μL     | 1000μL         |
| Calibrator                                                                                                                                                 | -      | 20μL       | -              |
| Sample                                                                                                                                                     | -      | -          | 20μL           |
| Distilled Water                                                                                                                                            | 20μL   | -          | -              |
| Mix carefully (do not vortex); incubate for 1-5 minutes at 37°C, Then add                                                                                  |        |            |                |
| Reagent 2                                                                                                                                                  | 250μL  | 250μL      | 250μL          |
| Mix and incubate for 2 min at 37°C, read absorbance against reagent blank. Measure the change in absorbance per minute ( $\Delta$ OD/min) during 2 minutes |        |            |                |
| or                                                                                                                                                         |        |            |                |
| Mix and read the optical density (T1) 120 seconds after the Reagent 2 addition. Take second reading (T2) exactly after 120 seconds                         |        |            |                |

## Calculation

$$\text{Lipase U/L} = \frac{(\Delta\text{OD/min}) \text{ Sample} - (\Delta\text{OD/min}) \text{ Blank}}{(\Delta\text{OD /min}) \text{ calibrator} - (\Delta\text{OD /min}) \text{ Blank}} \times \text{Calibrator concentration}$$

Or

$$\frac{(T2-T1) \text{ of sample}}{(T2-T1) \text{ of Calibrator}} \times \text{Calibrator concentration}$$

## Performance

### Linearity

This reagent is linear up to 300 U/L

If the concentration is greater than linearity (300U/L), dilute the sample with normal saline and repeat the assay. Multiply the result with dilution factor.

### Sensitivity

Lower detection Limit is 3 U/L.