Formaldehyde Assay Kit (BA0247)

Product Datasheet | SKU BA0247

Description

A quantitative colorimetric assay for the determination of formaldehyde. The kit employs formaldehyde dehydrogenase-catalysed oxidation of formaldehyde to generate formate and NADH, which reduces an MTT formazan dye measured at 565 nm.

Specifications

Detection Method	Colorimetric (OD565nm)
Detection Range	1.2 to 500 µM
Sample Type	Biological samples, food, beverages and the environment
Species Reactivity	All
Assay Time	30 minutes
Kit Size	100 Assays
Equipment Required	Microplate reader
Storage	-20°C
Shelf Life	6 months after receipt
Shipping	Gel Pack

Kit Components

Component	Quantity	Storage
Assay Buffer	15 mL	-20°C
NAD/MTT	1.0 mL	-20°C
Enzyme A	120 µL	-20°C
Enzyme B	120 µL	-20°C
Standard (10 mM Formaldehyde)	100 µL	-20°C

Ordering Information

Assay Genie Cat. No.	Pack Size
BA0247	100 Assays

Assay Procedure

Note: This is a sample protocol. Protocols are batch/lot specific - always follow the instructions supplied with your kit.

1. Sample preparation: clear and slightly coloured samples can be assayed directly. Test several dilutions to determine an optimal dilution factor n. Biological fluids (e.g. urine and serum) can be assayed directly after centrifuging to remove particulates; appropriate dilution in distilled water may be required.
2. Standards: prepare 0.5 mL 500 µM Standard by mixing 25 µL Standard (10 mM) and 475 µL distilled water. Dilute standards in 1.5-mL centrifuge tubes as described in the standards table.
3. Transfer 50 µL standards into separate wells of a clear, flat-bottom 96-well plate. Transfer 50 µL of each sample into separate wells.
4. Prepare sufficient Working Reagent (WR) for all wells by mixing, for each well: 150 µL Assay Buffer, 10 µL MTT/NAD, 1 µL Enzyme A and 1 µL Enzyme B. Add 150 µL WR to the four standards and the sample wells. Tap the plate to mix briefly and thoroughly. Incubate 30 minutes at room temperature.
5. Read optical density at 565 nm (520-600 nm).

Standard Preparation

No	Premix + H2O	Formaldehyde (µM)
1	200 µL + 0 µL	500
2	120 µL + 80 µL	300
3	60 µL + 140 µL	150
4	0 µL + 200 µL	0

Calculation

Subtract the blank value (#4) from the standard values and plot the ΔOD against standard concentrations. Determine the slope and calculate the formaldehyde concentration of the sample: [Formaldehyde] = (OD_SAMPLE – OD_BLANK) / Slope (μM^{-1}) × n (µM), where OD_SAMPLE and OD_BLANK are the optical density readings of the sample and water blank (#4) respectively, and n is the sample dilution factor. If the sample OD exceeds that of the 500 µM standard, dilute the sample in water and repeat the assay, multiplying the result by the dilution factor. Conversion: 1 µM formaldehyde equals 30 ppb.

Notes

- Briefly centrifuge tubes before opening.
- Equilibrate all components to room temperature prior to assay.
- Normal precautions for laboratory reagents should be exercised while using the reagents.
- Reagents are for research use only. Refer to the MSDS for detailed safety information.