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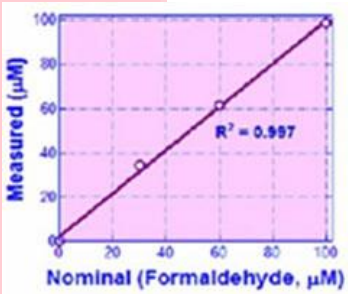
Formaldehyde Quantification with Fluorometer 360/460nm

Description:

FORMALDEHYDE (methanal) is widely employed in industry. Formaldehyde is also used as a disinfectant and is a commonly utilized tissue fixative and embalming agent. Formaldehyde is naturally present in all tissues and body fluids. Recently it has been shown that some cancer types exhibit elevated formaldehyde levels. Our Formaldehyde Assay Kit provides a convenient fluorimetric means to measure formaldehyde. In the assay, formaldehyde is derivatized with acetoacetanilide in the presence of ammonia. The resulting fluorescent product is then quantified fluorimetrically (λ ex/em=360nm/460nm) using our convenient handheld fluorometer.

Samples: Formaldehyde extracted from biological, food, and environmental samples.



Assay Performance:

- Linear Detection Range: 0 to 1 mM (0 – 3,000ppm).
- Detection Limit: 0.9 µM (27 ppb).
- Typical Precision (CV%): < 4% at 100 µM; < 4% at 30 µM.

Assay Procedure:

Important: Prior to assay, bring the assay reagents to room temperature.

1. Standard: Mix 5 µL the provided 10 mM Formaldehyde with 495 µL dH2O to make a 100 µM standard.
2. Prepare enough Working Reagent by combining the following per tube: 33 µL Reagent A and 22 µL Reagent B. In separate mini-glass tubes, add 50 µL H2O Blank, 50 µL 100 µM Standard, and 50 µL Sample. Then add 50 µL Working Reagent mix by pipetting. Incubate for 30 min in the dark.
3. Calibrate fluorometer. Place the "Blank" tube into the sample holder. Press "Calibrate", "Assay n" (n=user select), then "Blank". Fluorometer starts Measuring. Press number setting keys in "< - + >" until the window shows "100.00". Place the 100 µM Standard into the Sample holder. Press "Measure Std". The reader shows "Calibration Finished". The fluorometer is now calibrated. Press "Return".
4. Measure. Place the sample tube into the Sample Holder. Press "Measure", "Assay n", "Measure". The formaldehyde concentration (µM) will be displayed in the window. Press "Save" to save the data for later retrieval, press "Measure" for the next sample. Alternatively, note down the data and press "Return" to measure a next sample.
5. If the measured concentration is >100 µM, dilute the sample in H2O and repeat assay. Multiply the results by the dilution factor.
6. Samples high in protein (cell lysate, serum, etc.) need to be deproteinated and neutralized prior to assaying. To deproteinate, add 50 µL 10% TCA per 100 µL sample. Vortex and centrifuge for 5 min at 14000 rpm. Transfer 100 µL of clear supernatant to a clean tube and neutralize with 25 µL neutralizer. Note: Measured concentration for deproteinated samples need to be multiplied by 1.875 to compensate for the resulting dilution of the sample.

Product Information:

Products are for Research Use Only.

- Formaldehyde Assay Kit: sufficient for approximately 100 assays. Kit content: 5mL Reagent A, 3 mL reagent B, 100µL 10mM Standard, 5mL 10% TCA, 2x1.5mL Neutralizer.
- Mini-glass tubes
- The Fluorometer comes with a 5VDC power adapter, a USB cable, manual and data management software CD.
- Avoid contact and inhalation. Standard laboratory safety procedures should be followed when handling this product.
- Safety procedures include wearing OSHA approved safety glasses, gloves and protective clothing.
- Shipping and storage: the kit is shipped at room temperature.
- Store all reagents at 4°C. Shelf life: 18 months.