SunLong Biotech Co.,LTD
Tel: 0086-571-56623320 Fax:0086-571-56623318
E-mail:sales@sunlongbiotech.com
www.sunlongbiotech.com

Water Chromium (VI) Content Assay Kit

Note: Take two or three different samples for prediction before test.

Operation Equipment: Spectrophotometer

Cat No: AK0175

Size: 50T/48S

Components:

Reagent I: Liquid 4mL×1, store at room temperature.

Reagent II: Powder×1, store at 4℃ . Dissolve with 2.8mL of acetone **(self-provided)** before use. It can't be used after the color becomes darker.

Standard: Liquid 10 mL×1, 2 μmol/mL Cr^{6+}, store at room temperature. Dilute 160 times before use, prepare as 0.0125 μmol/mL standard solution.

Description:

Cr^{6+} mainly comes from sewage and exhaust gas discharged from electroplating, smelting, surface treatment industries. Cr^{6+} enters the human body through the digestive tract, respiratory tract, skin, and mucous membranes, causing injury, even genetic mutation and carcinogenesis.

In an acidic environment, Cr^{6+} interacts with diphenylcarbazide to form a purple-red complex with characteristic absorption at 540 nm.

Required but not provided:

Spectrophotometer, transferpettor, 1mL glass cuvette, acetone and distilled water.

Protocol:

1. Preheat spectrophotometer for 30 min, adjust wavelength to 540nm, set zero with distilled water.
2. Sample table:

Reagents	Blank tube (B)	Test tube (T)	Standard tube (S)
Distilled water (μL)	1000		
0.2 μmol/mL standard (μL)			1000
Water sample (μL)		1000	
Reagent I (μL)	50	50	50
Reagent II (μL)	50	50	50
Mix thoroughly, react for 10 min at room temperature, and then detect the absorbance at 540nm, record A_B, A_S, A_T . $\Delta A_T = A_T - A_B$, $\Delta A_S = A_S - A_B$.			

Calculation:

Cr^{6+} (μmol /mL) = $[C_S \times (A_T - A_B) \div (A_S - A_B)] = 0.0125 \times (A_T - A_B) \div (A_S - A_B)$

C_S : 0.0125 μmol/mL;

Note:

1. Directly measure colorless water samples;

2. Colored water sample: Take 1mL of water sample, add 50 μL of Reagent I, cover, mix well and place in a boiling water bath for 2 minutes, fade; after cooling, add 50 μL of Reagent II, mix thoroughly; leave at room temperature for 10 minutes. The absorbance is measured at 540 nm and recorded as A_T.

3. When the iron in the water sample is about 50 times of Cr^{6+}, it will cause yellow and interfere with the measurement. It is not suitable to use this kit for measurement; 10 times of vanadium can cause interference, but the color of vanadium and the reagent will disappear after 20 min; Molybdenum and mercury sinks above 200 mg/L cause interference.

4. Cr^{6+} is toxic ions of heavy metals. Pay attention to safety during the measurement. Wear masks and gloves to avoid inhalation or contamination.

5. When the absorbance is greater than 0.9, it is recommended to determine the sample after dilution.

Related Products:

AK0177/AK0176	Water Mercury Ion(Hg^{2+}) Content Assay Kit
AK0376/AK0375	Total Phosphorus Content Assay Kit
AK0078/AK0077	Tissue Iron Content Assay Kit
AK0074/AK0073	Blood Ammonia Content Assay Kit

Technical Specifications:

The detection limit: 0.0003491 μmol/mL

Linear range: 0.00039-0.025 μmol/mL