

Application Procedure for Analyzing Copper in Urine

Sample Preparation Procedure:

1. Thaw the urine samples at room temperature for 15-20 minutes.
2. Homogenize the samples by slowly vortexing.
3. Centrifuge at 14400 rpm for 2-3 minutes.
4. Dilute the urine samples with pure deionized water in a 1:3 ratio into a microplate (For example, 80 μ L urine + 240 μ L water).
5. Homogenize the diluted samples by mixing them on a microplate mixer for 2-3 minutes.

Standard Preparation:

The standards for the calibration curve are to be made up from a known concentration of NIST #2670 elevated concentration Reference Standards.

Standard No.	NIST standard volume (μ L)	Water volume (μ L)	Concentration (ppb)
1	2.5	317.5	2.9
2	5.0	315	5.8
3	10	310	11.6
4	20	300	23.2
5	30	290	34.8

Operating Conditions:

Instrumentation: Aurora AI 1100/2100 GFAAS.
 Parameter of settings: Injection Volume - 20 μ L

AURORA INSTRUMENTS AI 1100/2100	
Method Name	Urine
Element Name	Cu
Instrument Mode	Absorbance
Display Mode	Corrected
Manual Band Pass	0.7nm
Lamp 1 Current	3.0 mA
Lamp 2 Current	0.0 mA
Wavelength	327.36nm
PMT Voltage	301.0V
Preheat Steps	0
Cooling Time	60s
Inject Speed	5
Furnace Profile Steps	8

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Step	final temp	ramp time	hold time	Gas Flow	Plasma ON	Collect Data	Integrate
1	50	0.00	1.00	1.50	Off	Off	Off
2	130	12.00	1.00	1.50	Off	Off	Off
3	300	6.00	1.00	1.50	Off	Off	Off
4	850	10.00	2.00	1.50	Off	Off	Off
5	850	0.00	4.00	1.50	Off	On	Off
6	2300	0.00	1.00	0.50	Off	On	Off
7	30	0.00	3.00	1.50	Off	On	Off
8	30	0.00	18.00	1.50	Off	Off	Off

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