Method Guide: 40164

Atomic Absorption Method Guide
Zn in Blood Serum

Key Words

- Blood Serum
- Zinc
- Flame
- Atomic Absorption

Principle

The sample is diluted 1:10 with deionised water, and zinc is determined by flame atomic absorption spectrometry using an air-acetylene flame. Sodium is added to standard solutions to match potential background interference effects in the samples.

Reagents

Zinc master standard (1000 mg/L, SpectrosoL or equivalent)

Zinc sub-stock standard (1.0 mg/L, dilute 1.0 mL of the master standard to 1.0 L with deionised water)

Sodium master standard (140 mM/L)
Dissolve 8.2 g of dry sodium chloride (zinc-free) in the minimum necessary quantity of deionised water, and make up to 1.0 litre with deionised water in a volumetric flask. This solution must be stored in a plastic bottle.

Working standards
Prepare working standards containing 0, 0.1 and 0.2 mg/L of zinc by adding 0, 10.0 and 20.0 mL of the zinc sub-stock standard into a series of 100 mL volumetric flasks. Add 10 mL of the sodium stock solution to each flask and dilute to volume with deionised water.

Sample Preparation

Using a micro-pipette, transfer 1.00 mL of the serum sample into a clean, dry 10 mL volumetric flask and make up to volume with deionised water. Ensure that the solution is thoroughly mixed before analysis. 0.2 mg/L of zinc in this solution is equivalent to 2.0 mg/L in the original sample.

Instrument Parameters

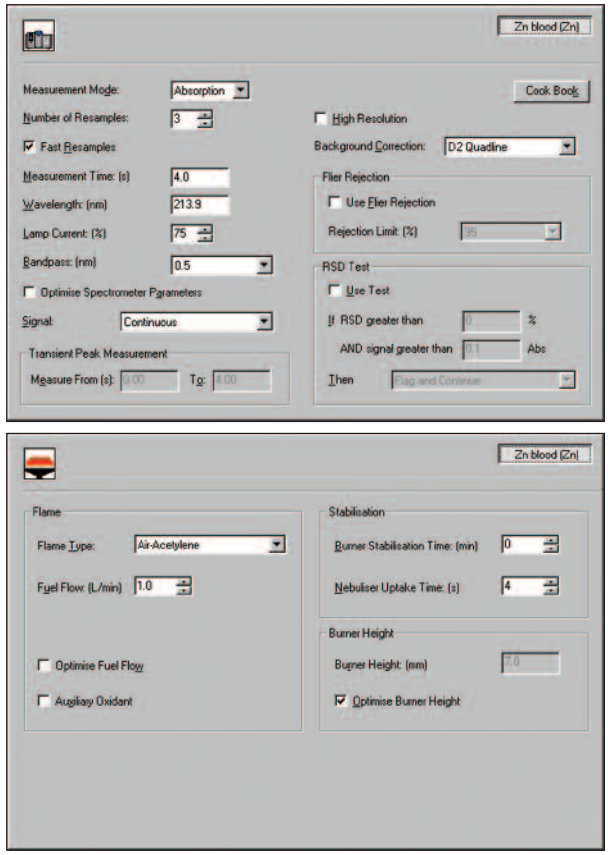

Figure 1: Instrument parameters

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Results

Sample	Reference serum (1)	Reference serum (2)	Reference serum (3)	Reference serum (4)	Reference serum (5)
Zinc found (mg/L)	1.74	0.94	0.88	1.06	0.96
Reference value (mg/L)	1.75	0.93	0.87	1.03	0.98

The method of sample treatment described in this publication should be performed only by a competent chemist or technician trained in the use of safe techniques in analytical chemistry. Users should acquaint themselves with particular hazards which may be incurred when toxic materials are being analysed and handled in the instruments, and the instrument must be used in accordance with the operating and safety instructions given in the Operators manual.

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AN40164_E 03/08C