



**ZA3000**

## Analysis of Pb in Kampo Medicine (Kakkontou) (Flame Method)

**INTRODUCTION:** Rootstocks, etc., easily affected by metals in soil are used as the raw materials of crude drugs. Therefore, the heavy metals standards, calculated as lead, are described for each heavy metal under the heavy metals tests of the Japanese Pharmacopoeia. Lead in kampo medicines prepared by combining crude drugs is analyzed during the quality control processes, etc. The ZA3000 series instruments employ the polarized zeeman correction method for the background corrections even in the flame method. As good baseline stability is provided, lead at a level of about 0.05 mg/L can be sufficiently analyzed and a good addition recovery can be obtained.

### ANALYTICAL CONDITIONS

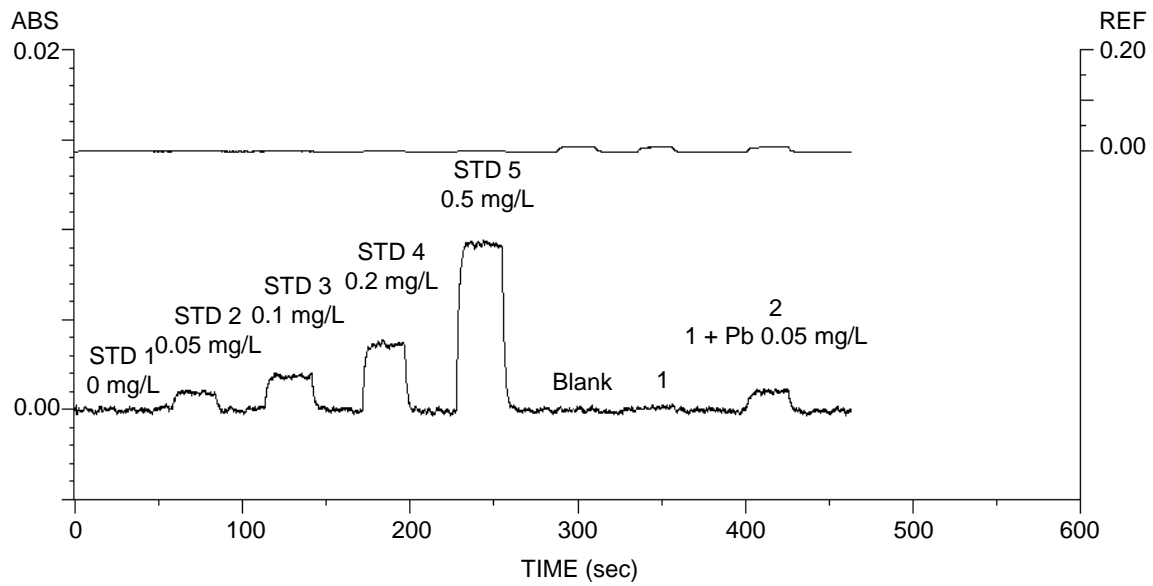
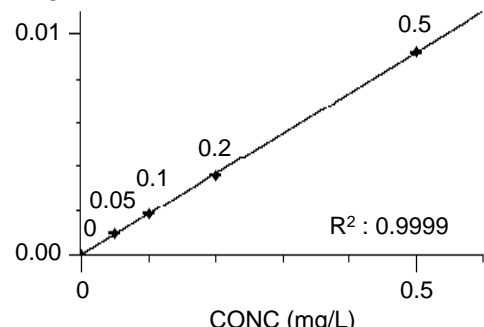
### MEASUREMENT PARAMETERS

Element : Pb Instrument : ZA3000 Atomization : Flame Wavelength : 217.0 nm Lamp Current : 7.5 mA Slit Width : 1.3 nm	Atomizer : STD Burner Flame : Air-C <sub>2</sub> H <sub>2</sub> Fuel (C <sub>2</sub> H <sub>2</sub> ) : 2.0 L/min Oxidant (Air) : 160 kPa : 15.0 L/min Burner Height : 7.5 mm	Meas. Mode : Working Curve Signal Mode : BKG Corrected Curve Order : Linear Calculation : Integration Time Constant : 1.0 sec Calculation Time : 5.0 sec Delay Time : 5 sec
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**NOTE :** [Preparation] 7 mL of nitric acid and 1 mL of hydrogen peroxide solution were added to 0.5 g of the sample and the mixture was heated for dissolution by a microwave digester. After cooling, the volume was diluted to 10 mL with purified water.

Sample 1: Kakkontou solution, Sample 2: Sample 1 + Pb 0.05 mg/L addition, Addition recovery rate: 108%

	CONC (mg/L)	Mean ABS	SD	RSD	REF	ABS
STD 1	0.000	0.00001	0.00001	00.00 %	0.00008	0.01
STD 2	0.050	0.00098	0.00002	2.04 %	0.00003	
STD 3	0.100	0.00185	0.00004	2.16 %	-0.00002	
STD 4	0.200	0.00362	0.00002	0.55 %	0.00009	
STD 5	0.500	0.00921	0.00003	0.33 %	0.00090	
Blank	ND	0.00000	0.00001	- %	0.00954	
1	ND	0.00011	0.00003	27.27 %	0.00789	
2	0.054	0.00102	0.00001	0.98 %	0.00808	



**KEY WORDS**  
 Medicine Bio/Medical Science/Food/Pharmaceutical,  
 Medicine/Pharmaceutical, Medical Science/Pharmaceutical Science,  
 Medicine, Kampo Medicine, Kakkontou, Lead, Pb, Flame, AA, ZA3000

Atomic Absorption Photometer  
(AA)

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