Ion-exchange chromatography protocol for separating lead

The protocol is based on the work of Strelow and Toerien 1996. It is a single-step protocol which uses anion-exchange columns using the AG1-X8 (100–200 mesh) resin. Pre-cleaned Teflon beakers, double-distilled acids, and ultrapure water (MQ water) are used for the handling of samples throughout the protocol.

Reference

Strelow, F. W. E., and Toerien, F. V. S., 1966, Separation of Lead(II), from Bismuth(III), Thallium(III), Cadmium(II), Mercury(II), Gold(III), Platinum(IV), Palladium(II), and Other Elements by Anion Exchange Chromatography, Analytical Chemistry, 38(4), 545–8.

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Date:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Sample name												
Preparation of sample for IEC												
Dissolve sample in 1 ml 7N HBr overnight at 90°C												
Evaporate to dryness												
Dissolve sample in 0.5 ml 0.6N HBr for about 1 h												
Preparation of columns												
Rinse columns with MQ water												
Fill columns with resin AG1x8												
Washing												
1 ml MQ water												
1 ml 6N HCl												
1 ml MQ water												
1 ml 6N HCl												
1 ml MQ water												
1 ml 6N HCl												
1 ml MQ water												
Conditioning												
1 ml 0.6N HBr												
Load sample												
Add prepared sample solution												
Eluate Cu + matrix												
Change beakers if to be kept												
3 times 1 ml 0.6N HBr												
Collect Pb												
Change beakers												
4 times 1 ml 6N HCl												
Drive off Br_2 & organics												
Evaporate collected fractions												
Dissolve in 1 ml 6N HNO_3 at 90°C												
Evaporate to dryness at 90°C												