离子色谱-双氧水中无机阴离子的测定

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摘要：本文使用离子色谱测定双氧水中的无机阴离子，样品双氧水，测试目标离子为氯离子、硝酸根离子、磷酸根离子和硫酸根离子，样品状态为液体，需将双氧水中过氧化氢分解后方可提取目标离子。本次测定使用碳酸根体系测试系统，通过空白样品、样品平行及样品加标执行本次试验。

关键词：离子色谱;双氧水;无机;阴离子

Ion Chromatography Determination of Inorganic Anions in Hydrogen Peroxide

Abstract: In this paper, the inorganic anions in hydrogen peroxide are determined by ion chromatography. The sample hydrogen peroxide is tested. The target ions are chloride ions, nitrate ions, phosphate ions and sulfate ions. The sample state is liquid. The target ions can be extracted only after the hydrogen peroxide in hydrogen peroxide is decomposed. The carbonate system test system is used for this determination, and the test is carried out through blank sample, sample parallel and sample spiking.

Keywords: Ion chromatography; hydrogen peroxide solution; Inorganic; anion

1 仪器设备

1.1 离子色谱仪（配有电导检测器）：IC6000；

1.2 自动进样器：AS3100；

2 色谱条件

色谱柱：阴离子分析柱 4×250mm

淋洗液：3.6mM Na2CO3

流速：0.8mL/min

池温：45℃

柱温：45℃

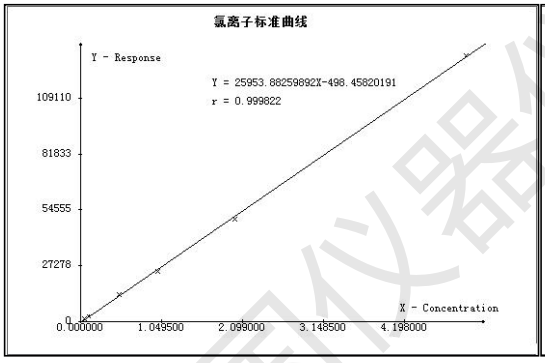
电流：30mA

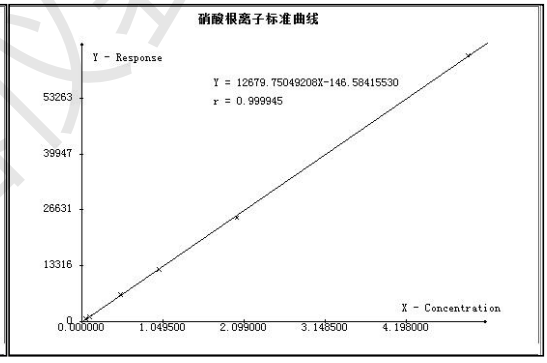
进样量：50μL

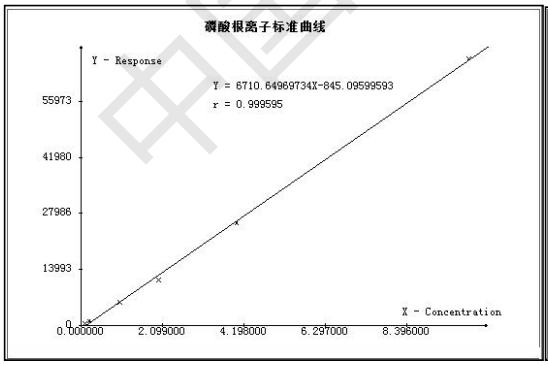
3 测试结果谱图及分析

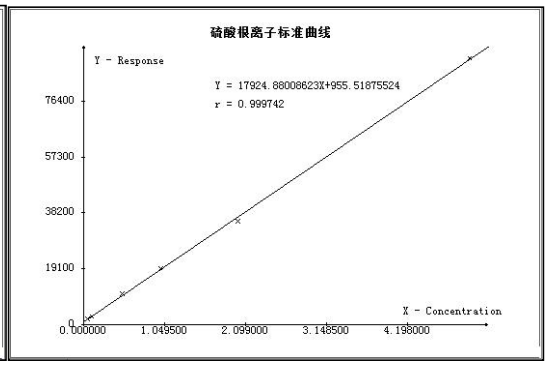
3.1 标准曲线

标准曲线系列梯度浓度表（mg/L）						
离子名称	1	2	3	4	5	6
氯离子	0.05	0.10	0.50	1.00	2.00	5.00
硝酸根	0.05	0.10	0.50	1.00	2.00	5.00
磷酸根	0.10	0.20	1.00	2.00	4.00	10.00
硫酸根	0.05	0.10	0.50	1.00	2.00	5.00

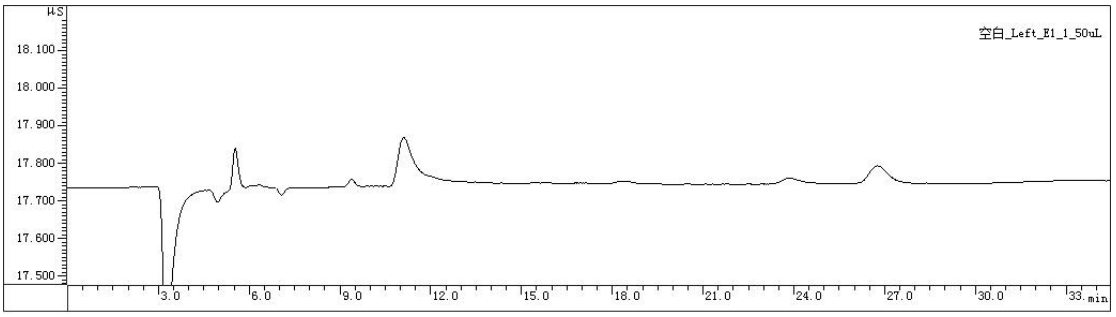






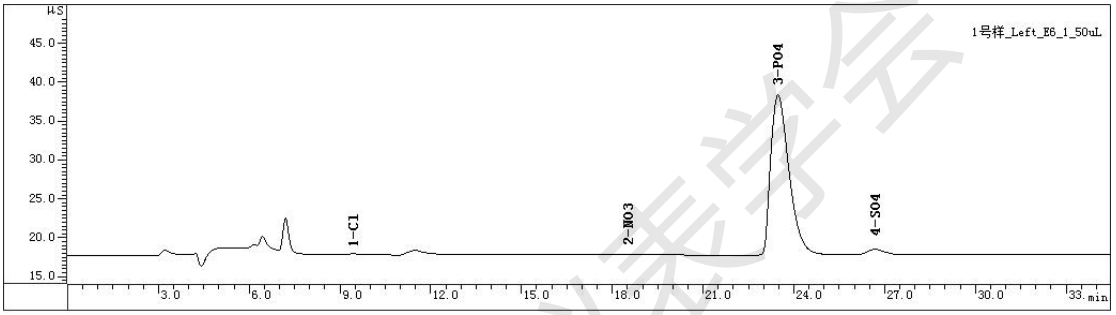


3.2 样品测试结果

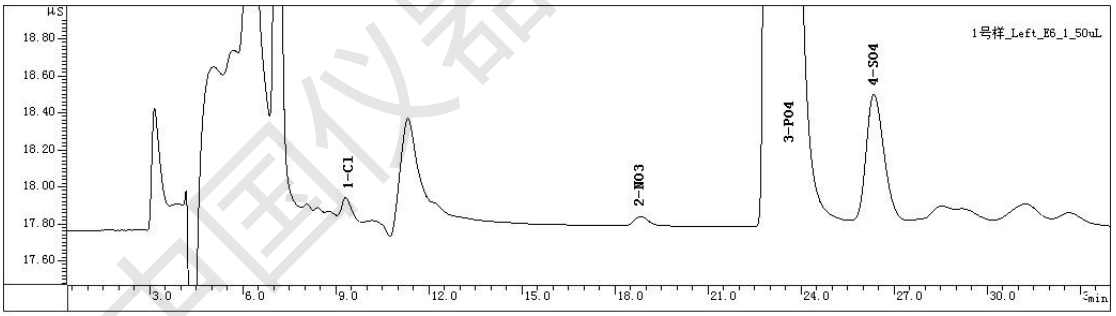


样品空白

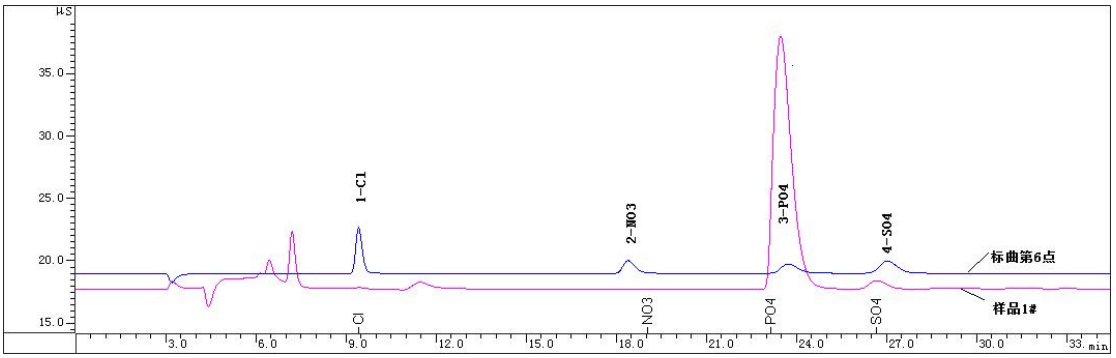
1#样品



原图

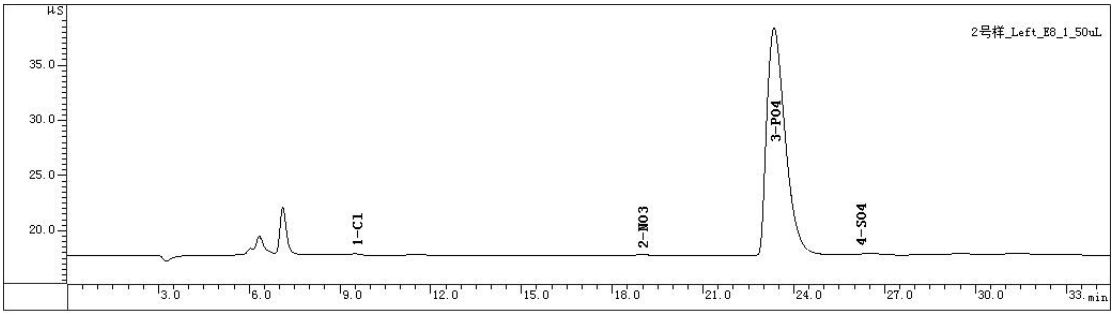


放大图



与标准品对比图

2#样品



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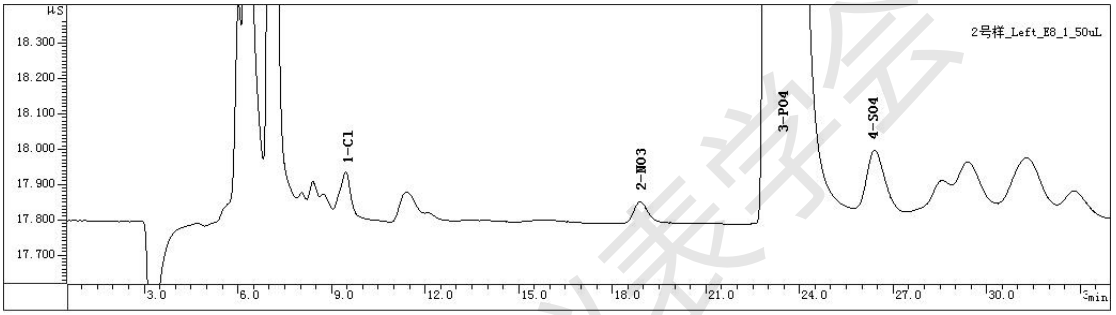
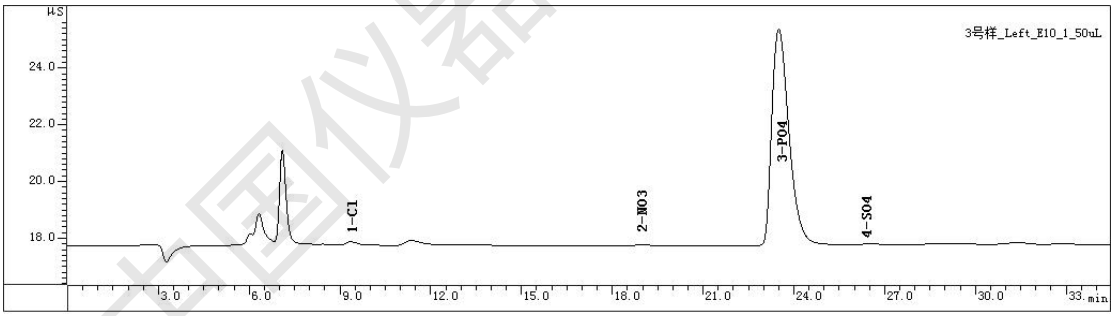


放大图

3#样品



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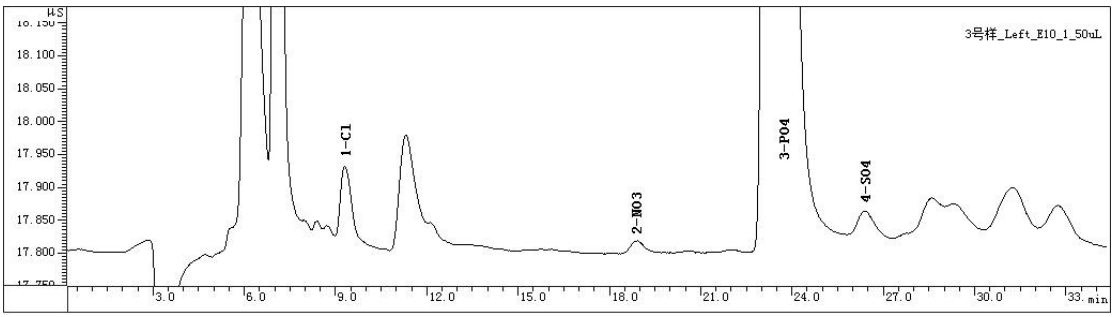
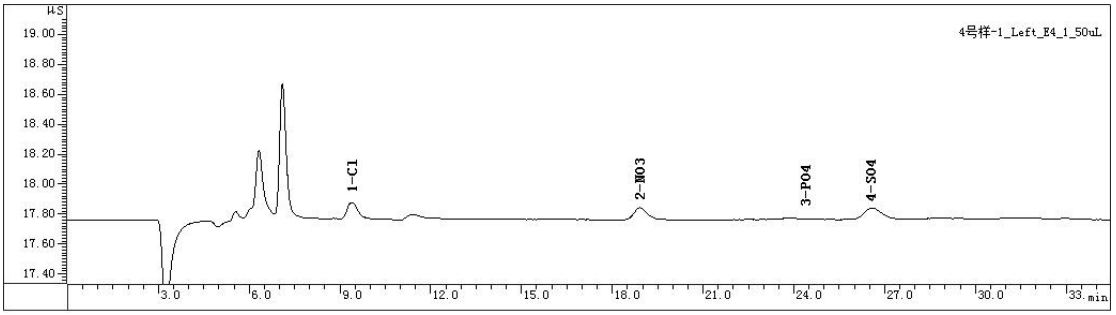
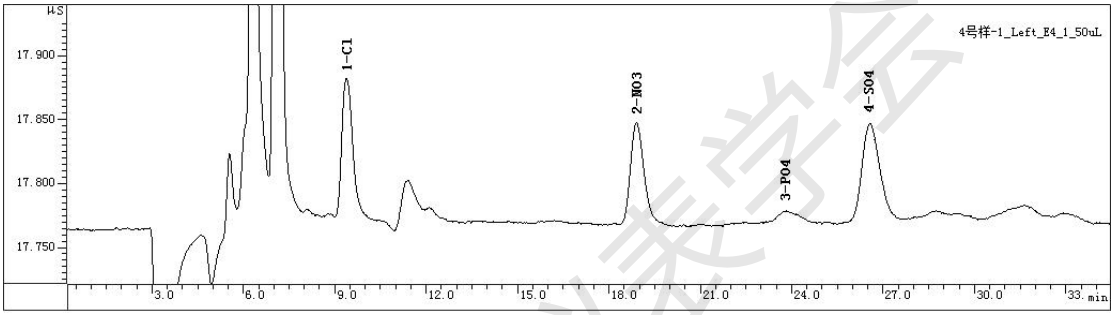


放大图

4#样品



原图



放大图

4 结果计算

样品结果（mg/L）				
组份	1#	2#	3#	4#
Cl^-	0.396	0.374	0.502	0.493
NO_3^-	0.661	0.806	0.298	1.030
PO_4^{3-}	512.500	502.805	209.814	未检出
SO_4^{2-}	7.308	1.330	0.230	0.390