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**NATIONAL STANDARD OF THE
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**Determination of styrene and 2-chloroethanol in cell culture
medium-Gas chromatography-mass spectrometry (GC-MS)**

细胞培养液中苯乙烯、2-氯乙醇的测定 气相色谱-质谱 (GC-MS) 法

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Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms and definitions
4 Principle
5 Reagents and Materials

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed and coordinated by the National Technical Committee for Biochemical Testing Standardization (SAC/TC387).

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Determination of Styrene and 2-Chloroethanol in Cell Culture Medium Gas chromatography-mass spectrometry (GC-MS)

1 Scope

This document describes a method for the determination of free styrene and 2-chloroethanol in cell culture fluid by gas chromatography-mass spectrometry (GC-MS).

This document is applicable to the detection of free styrene and 2-chloroethanol in cell culture medium.

2 Normative references

GB/T 6682

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4 Principle

Add inorganic salts to the cell culture medium while adding internal standards to promote the volatile substances to evaporate from the cell culture medium and enter the The gas phase was collected by automatic headspace sampler and then analyzed and confirmed by GC-MS method, using internal standard working curve Legal amount.

5 Reagents and Materials

Unless otherwise specified, all reagents used in this document are chromatographically pure. Water is first-grade water in accordance with GB/T 6682. 5.1 Sodium chloride (NaCl). 5.2 Methanol (CH₃OH).

5.3 Standards. Styrene, D8-styrene, 2-chloroethanol, 2-fluoroethanol, purity $\geq 99.5\%$, basic information see Appendix A.

A standard solution of a certain concentration that is certified and granted a standard substance/standard sample certificate.

5.4 Standard stock solution. After preparation, store in a sealed container at 2°C~8°C. The shelf life is 6 months.

5.4.1 Styrene (1 mg/mL). Accurately weigh 50.0 mg of styrene standard, dissolve it in methanol, and then dilute it to a 50 mL volumetric flask.

Prepare a control stock solution with a final concentration of 1 mg/mL. Take 2.5 mL into a 50 mL volumetric flask, dilute to the mark with methanol, and mix.

The solution was mixed and mixed to form a 50 µg/mL solution as the intermediate stock solution.

5.4.2 D8-styrene (1 mg/mL). Accurately weigh 50.0 mg of D8-styrene internal standard, dissolve it in methanol, and dilute it to 50 mL.

100 mL of the control stock solution was prepared in a volumetric flask to a final concentration of 1 mg/mL. 0.5 mL was placed in a 50 mL volumetric flask and diluted to 100

mL with methanol.

degree, mix well, and prepare a 10 µg/mL solution as the intermediate stock solution.

5.4.3 2-Chloroethanol (10 mg/mL). Accurately weigh 100.0 mg of 2-chloroethanol standard, dissolve it in methanol, and make up to 10 mL.

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