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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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Determination of acetylcholine and its salts in cosmetics - Liquid chromatography-tandem mass spectrometry

化妆品中乙酰胆碱及其盐类的测定 液相色谱–串联质谱法

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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 by the China Light Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Flavors and Fragrances and Cosmetics (SAC/TC257).

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Introduction

The substances tested in this document are prohibited raw materials as stipulated in China's "Technical Specifications for Safety of Cosmetics (2015 Edition)".

Prohibited raw materials refer to substances that cannot be used as cosmetic raw materials. The "Cosmetic Safety Technical Specifications (2015 Edition)" stipulates that "if the technical When it is unavoidable that banned substances are introduced into cosmetics

as impurities, the national limit should be followed; if there is no limit, safety measures should be taken.

A comprehensive risk assessment is conducted to ensure that no harm to human health is caused under normal, reasonable and foreseeable conditions of use." At present, China has not yet stipulated the limit values for these substances. The formulation of this document only provides detection methods for the determination of these substances in cosmetics.

Determination of acetylcholine and its salts in cosmetics Liquid chromatography-tandem mass spectrometry Warning. Personnel using this document should have practical experience in regular laboratory work. This document does not address all possible safety issues.

For any problems, users are responsible for taking appropriate safety and health measures and ensuring that the conditions stipulated by relevant national laws and regulations are met.

1 Scope

This document describes the principle, reagents and materials, instrumentation, and methods for the determination of acetylcholine and its salts in cosmetics using liquid chromatography-tandem mass spectrometry.

The content includes instrument equipment, sample preparation and test steps, test data processing, recovery rate, precision and test report.

This document is applicable to the determination of acetylcholine and its salts in aqueous, cream, emulsion and oil cosmetics.

The detection limit of acetylcholine and its salts (calculated as acetylcholine) in this document is 0.05 mg/kg, and the quantification limit is 0.1 mg/kg.

2 Normative references

GB/T 6682

3 Terms and Definitions

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

4 Principles

The sample was vortexed with 50% acetonitrile solution, ultrasonically extracted, degreased with n-hexane, centrifuged and filtered to obtain the target solution.

The standard solution was injected into the liquid chromatography-tandem mass spectrometer, separated by liquid chromatography and detected by mass spectrometry.

Ion abundance was used for qualitative analysis and external standard method for quantitative analysis.

5 Reagents and Materials

Unless otherwise specified, all reagents used were of analytical grade.

5.1 Water, GB/T 6682, Grade 1.

5.2 Acetonitrile. chromatographic grade.

5.3 Acetic acid. chromatographic grade.

5.4 n-Hexane. chromatographic grade. 5.5 Ammonium acetate.

5.6 Acetylcholine standard sample/standard substance. purity not less than 99.0%, English name, CAS number, molecular weight The formula, relative molecular mass and chemical structure are shown in Table A.1 in Appendix A.