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**Determination of plant extracts antioxidant activity - Thin layer
chromatography method**

植物提取物抗氧化活性测定 薄层色谱法

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Foreword

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This document is proposed and coordinated by the China National Institute of Standardization.

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Determination of antioxidant activity of plant extracts by thin layer chromatography

1 Scope

This document describes a method for determining the antioxidant activity of plant extracts by thin layer chromatography.

This document is applicable to the determination of antioxidant activity of extracts of chamomile, plantain, forsythia, bamboo leaves or sophora japonica, and the antioxidant activity of other plant extracts.

Oxidative activity assay was used as a reference.

2 Normative references

GB/T 6682

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Antioxidant activity

The ability of antioxidants in plant extracts to scavenge free radicals or oxidants.

4 Principle

Thin layer chromatography separation principle. Since the chromatographic stationary phase has different antioxidant activities in plant extracts (such as phenols, flavonoids The adsorption capacity of the mobile phase is different. When the mobile phase flows through the stationary phase, adsorption, desorption, re-adsorption and re-desorption will occur continuously.

This allows compounds with different antioxidant activities to be separated from each other.

2,2-Biphenyl-1-picrylhydrazyl (DPPH) impregnation color development principle. DPPH has a dark purple appearance and is evenly applied to a thin layer of color by impregnation.

The free radical scavenger on the stationary phase reacts with DPPH to significantly lighten its color, forming a light yellow on a dark purple background. Color spots.

The compounds with different antioxidant activities in plant extracts were separated by thin layer chromatography and DPPH immersion was used to analyze the antioxidant activity of the compounds.

Color reaction (the result of the color reaction is quantitatively detected by a thin layer chromatography scanner). The peak area of rutin is used as the reference peak area.

The total peak area of the plant extract was taken as the sample peak area, and the comprehensive peak area of the plant extract was expressed by the ratio of the sample peak area to the control peak area (A_i). Antioxidant activity.

5 Reagents and Materials

Unless otherwise stated, all reagents used in the analysis were of analytical grade.

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