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Method for the determination of lectin in fungi-High performance liquid chromatography

食用菌中凝集素的测定 高效液相色谱法

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

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Determination of lectins in edible fungi by high performance liquid chromatography

1 Scope

This method describes a high performance liquid chromatography (HPLC) method for the determination of lectin content in edible fungi.

This document is applicable to the determination of lectins in Enoki mushroom, Oyster mushroom, White jade mushroom, Lentinus edodes, and King oyster mushroom, and is for reference in other types of edible fungi.

The detection limit of lectin in this method is 6.2 mg/kg for fresh product and 9.2 mg/kg for dry product; the quantitative limit is 12.4 mg/kg for fresh product and 12.4 mg/kg for dry product. The drug is 18.4 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 lectin in the sample was extracted with phosphate buffer, and the solubility and molecular weight differences were utilized to precipitate the lectin through ammonium sulfate and concentrate it by ultrafiltration.

The product was determined by high performance liquid chromatography, with retention time as the qualitative method and external standard method as the quantitative method.

5 Reagents and Materials

Unless otherwise specified, only analytical grade reagents were used.

5.1 Water, GB/T 6682, Grade 1.

5.2 Acetonitrile (C2H3N). chromatographically pure.

5.3 Trifluoroacetic acid (C2HO2F3).

5.4 Ammonium sulfate [(NH4)2SO4].

5.5 Sodium hydrogen phosphate solution (0.02 mol/L). Add 7.16 g of sodium hydrogen phosphate dodecahydrate (NaHPO4- 12H2O).

5.6 Sodium dihydrogen phosphate solution (0.02 mol/L). Add 3.12 g of sodium dihydrogen phosphate dihydrate (NaH2PO4-2H2O) to 1 L of first-grade water.

5.7 Phosphate extract (0.02 mol/L). Mix disodium hydrogen phosphate solution and sodium dihydrogen phosphate solution and adjust the pH to 7.2.

5.8 Ammonium sulfate solution (30% saturation). Weigh 176 g of ammonium sulfate [(NH4)2SO4] solid and dissolve it in grade 1 water to make up to 1 L.

5.9 Water filter membrane. pore size 0.45 μm, used for filtering mobile phase.

5.10 Lectins from edible fungi (electrophoretic purity >= 95%), or standards or samples certified by relevant authorities.