

Protopectin (SP) Extraction Reagent

O1509542

Storage Room temperature.

Shipping Regular transportation.

Introduction

Natural pectin substances exist extensively in the fruits, roots, stems and leaves of plants in the forms of protopectin, pectin and pectic acid, and serve as a component of plant cell walls. They coexist with cellulose and form the cementing substance in the middle lamella between adjacent cells, binding plant tissue cells tightly together. Protopectin is water-insoluble, but it can be hydrolyzed into water-soluble pectin under the action of chemical reagents such as acids, alkalis and salts, as well as enzymes with the addition of water. Pectin, also known as polygalacturonic acid, is a linear polymer formed by the linkage of D-galacturonic acid via α -1,4 glycosidic bonds and is essentially a linear polysaccharide polymer. It contains hundreds to about 1000 anhydrogalacturonic acid residues, with a corresponding average relative molecular mass of 50,000-150,000. Protopectin is a water-insoluble substance; in immature fruits or plant tissues, most pectin substances combine with cellulose and exist in the form of protopectin, which imparts hardness and crispness to fruits and other plant tissues. Protopectin (SP) Extraction Reagent is mainly used for the extraction of soluble pectin and protopectin from plant tissues or fruits. This reagent is for research use only (RUO) and not intended for clinical diagnosis or other applications.

Product Composition

O1509542	Component	2×500 mL	Storage
O1509542A	Soluble Pectin Extraction Reagent	4×250 mL	RT.
O1509542B	Protopectin Extraction Reagent	100 mL	RT.

Materials Provided by User

1. Distilled water.
2. Experimental materials: fruits such as peaches, plums, apples, apricots, or other plant tissues.
3. Balance, scissors, mortar or homogenizer, centrifuge, water bath, test tubes or centrifuge tubes.

Operating Procedures (For Reference Only)

1. Take the fruit or other plant tissues, wash and dry them thoroughly. Weigh 0.2 g of the cut fresh sample and place it in a mortar or homogenizer.

2. Add 1-2 mL of Soluble Pectin Extraction Reagent, grind or homogenize the sample fully, and then transfer the mixture to a 10 mL test tube. Rinse the mortar or homogenizer with Soluble Pectin Extraction Reagent and transfer the rinse solution to the same test tube, then make up the volume to 10 mL with the same reagent.
3. Incubate the test tube in a boiling water bath for 30 minutes; replenish Soluble Pectin Extraction Reagent in a timely manner to maintain the volume at 10 mL during boiling. Take out the test tube and cool it to room temperature, then centrifuge at 8000 r/min for 15 minutes and discard the supernatant. Repeat this step twice to completely remove sugars and other impurities from the sample.
4. Take the test tube containing the precipitate, add 4 mL of distilled water, and incubate in a 50 °C water bath for 30 minutes to dissolve the pectin. Take out the test tube and cool it to room temperature, centrifuge at 8000 r/min for 15 minutes, and transfer the supernatant to a new test tube. Wash the precipitate with a small amount of distilled water, centrifuge again at 8000 r/min for 15 minutes, transfer the resulting supernatant to the aforementioned new test tube, and make up the volume to 10 mL with distilled water. This is the soluble pectin extract.
5. Add 3 mL of Protopectin Extraction Reagent to the precipitate washed with distilled water in the previous step, incubate in a boiling water bath for 1 hour, take out the test tube and cool it to room temperature, then centrifuge at 8000 r/min for 15 minutes. Make up the volume to 10 mL with distilled water; this is the protopectin extract.

Precautions

1. The sample amount and reagent volume should be adjusted appropriately according to the pectin content in the sample.
2. Soluble sugars have a significant impact on the determination results; thus, soluble sugars in the sample must be completely removed.
3. Please use the reagent as soon as possible after opening the package to avoid affecting the results of subsequent experiments.
4. For your safety and health, wear a lab coat and disposable gloves during the operation.