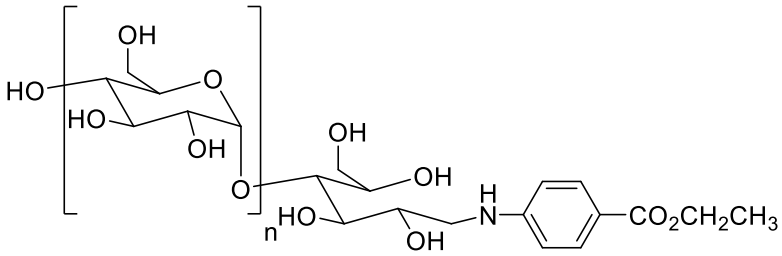
Claims

1. A method for analyzing polysaccharide content in a test sample comprising at least one herb selected from the group consisting of *Dendrobium officinale*, Radix Astragali, and Radix Angelica Sinensis, the method comprising:

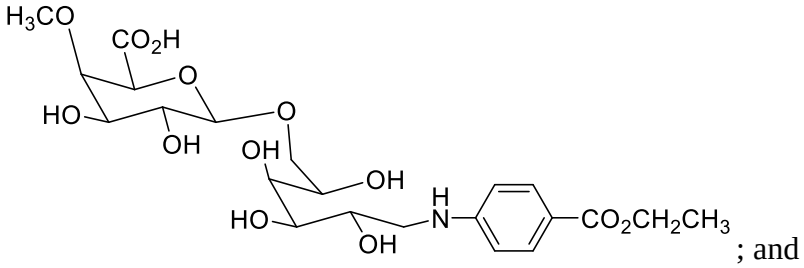
contacting the test sample with a solvent comprising water thereby forming a polysaccharide sample;

contacting the polysaccharide sample with a trifluoroacetic acid and water thereby forming a saccharide sample comprising oligosaccharides and monosaccharides;

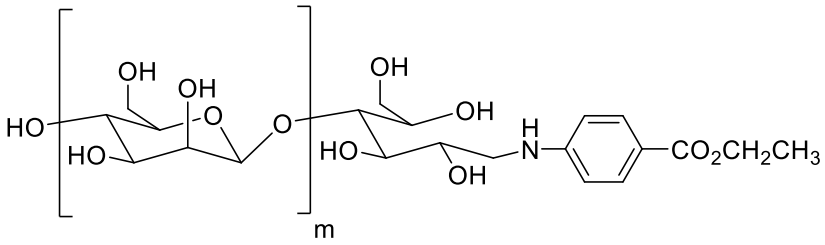
contacting the saccharide sample with 4-aminobenzoic acid ethyl ester (ABEE) and a reducing agent selected from the group consisting of $NaBH_4$ and $NaBH_3CN$ thereby forming an ABEE labeled saccharide sample comprising one or more ABEE labeled saccharides selected from the group consisting of:



wherein n is 7;



; and

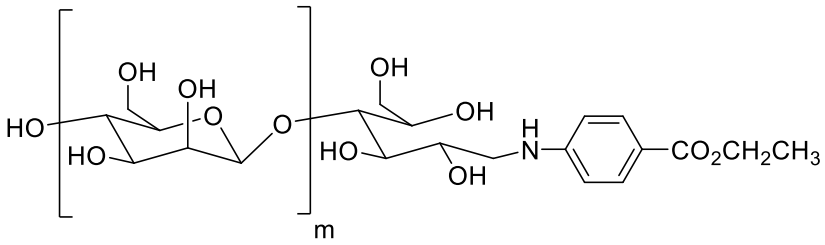


wherein m is a whole number selected from 3 or 4; and

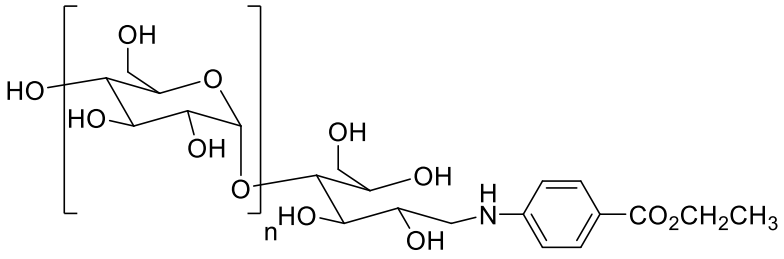
analyzing the ABEE labeled saccharide sample using at least one analytical method selected from the group consisting of liquid chromatography-mass spectrometry (LC-MS) and high-performance gel permeation chromatography (HPGPC) thereby providing test sample polysaccharide content related data.

2. The method of claim 1, wherein at least 10% of the polysaccharides in the test sample are partially hydrolyzed.

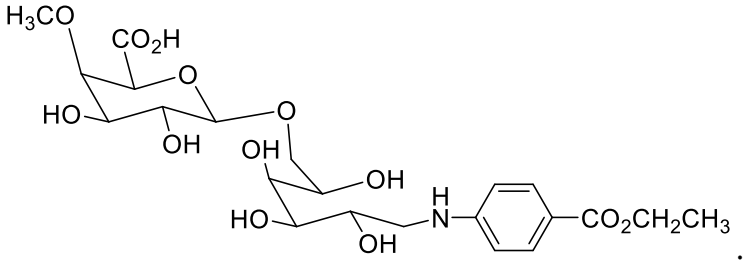
3. The method of claim 1, wherein the at least one herb is *Dendrobium officinale* and the one or more ABEE labeled saccharides is:



wherein m is a whole number selected from 3 or 4; or the at least one herb is selected from the group consisting of Radix Astragali, Radix Angelica Sinensis, and combinations thereof; and the one or more ABEE labeled saccharides is selected from the group consisting of:



wherein n is 7; and



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4. The method of claim 1 further comprising the step of comparing the test sample polysaccharide content related data with one or more calibration curves prepared by using the interrelation between known concentrations of the one or more ABEE labeled saccharides in standard samples; and determining the concentration of at least one polysaccharide in the test sample.

5. The method of claim 1, wherein the polysaccharide content related data is used to authenticate the quality or the identity of the at least one herb.