

Fractionation of Tannic Acid

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Tannic acid can be purified without preliminary methanolysis to yield selectively enriched mixtures of galloyl esters. Sephadex LH20 selectively adsorbs high molecular weight polyphenols in alcohol and releases them in aqueous acetone. The product of purification can be characterized by HPLC. Preparative scale normal phase HPLC can also be used to purify specific galloyl esters. It is crucial to use a preparation of tannic acid which contains a significant proportion of the desired components. Preliminary HPLC analysis will indicate whether a given preparation is suitable.

Purification on Sephadex LH 20

Tannic acid should be dissolved in absolute ethanol and applied to Sephadex LH 20. The gel is washed with ethanol until the eluate is free of phenolics as detected by spot tests with the Prussian blue reagent. The tannin can then be eluted from the gel with 50% aqueous acetone containing 0.001 M ascorbic acid to prevent oxidation. The tannin quickly becomes discolored due to oxidation in the absence of the ascorbic acid. The acetone is removed by evaporation under reduced pressure at temperatures less than 30 C. The aqueous solution is then lyophilized to yield a white powder. The constituents of the material can be characterized by HPLC. Ascorbic acid is a minor component of the product.

Purification by preparative scale HPLC

Use normal or reverse phase systems.