

# ***Chemical Modification of Tannins***

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Tannins can be modified to change their solubility properties or to eliminate the reactive phenolic functional groups. The modified tannins do not retain the characteristic chemical or biological reactivities of native tannins.

## ***Acetylation***

Puts an acetyl group on each hydroxyl group of the starting material. Polarity of the tannin is diminished, and it is insoluble in aqueous solvents. Slowly drip a mixture of 5 mL pyridine and 5 mL fresh acetic anhydride into a flask containing 2 g tannic acid. Pour the solution into water; a solid should form. The solid is washed with dilute acetic acid (to remove the pyridine) and then with water. It can be freeze dried. Its IR spectrum shows loss of the phenolic OH group.

## ***Methylation***

Converts each hydroxyl group to its methyl ester. Polarity of the tannin is diminished and its solubility altered. We have not attempted this procedure. To methylate tannin, mix it with excess methyl iodide, reagent acetone and solid potassium carbonate. Reflux the mixture overnight and purify the product.