

# ***Condensed Tannin HPLC***

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HPLC of condensed tannins has proved more difficult than HPLC of hydrolysable tannins. Good separations of monomeric flavonoids are easily achieved. Oligomeric proanthocyanidins (dimers-pentamers) can be resolved. However, separation of the high molecular weight polymeric procyanidins has not been successful. A few references to HPLC methods are given below, but we are not experienced in using these methods and cannot specifically recommend any particular one.

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Lazarus SA, Hammerstone JF, Adamson GE, and Schmitz HH. High-performance liquid chromatography/mass spectrometry analysis of proanthocyanidins in food and beverages. *Methods Enzymol* 335, 46-57. 2001.

Natsume M., Osakabe N., Yamagishi M., Takizawa T., Nakamura T., Miyatake H., Hatano T., and Yoshida T. Analyses of polyphenols in cacao liquor, cocoa, and chocolate by normal-phase and reversed-phase HPLC. *Biosci Biotechnol Biochem* 64(12), 2581-7. 2000.

Prior RL, Lazarus SA, Cao G, Muccitelli H, and Hammerstone JF. Identification of procyanidins and anthocyanins in blueberries and cranberries (*Vaccinium* spp.) using high-performance liquid chromatography/mass spectrometry. *J Agric Food Chem* 49(3), 1270-6. 2001.

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