

Sample Preparation and HPLC Determination of Catechins in Green Tea

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HPLC separation method of main seven green tea catechins has been developed. Three HPLC columns of different lengths, particle sizes, and sorbent properties were tested for this purpose. Separation was performed applying gradient elution with a mobile phase containing formic acid (0.28%) and an organic modifier (acetonitrile or methanol). Basic chromatographic characteristics were evaluated for each column and mobile phase composition. Extraction of catechins was performed in two ways: applying either methanol or boiling water under classical brewing conditions. Yields of analytes were calculated for both extraction techniques. Solid-phase extraction with molecularly imprinted polymer towards (+)-catechin was used for the cleanup of methanolic extract of green tea. Very good selectivity and recovery (95%) were achieved for the template molecule.