

Inhibitory activities of semicarbazide-sensitive amine oxidase and angiotensin converting enzyme of pectin hydroxamic acid

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Abstract

Solutions of 100 mL of 1% commercial pectin each with a different degree of esterification (DE), DE94, DE65, and DE25, were reacted with 100 mL of 2 M alkaline hydroxylamine (pH 12.0) at room temperature for 4 or 18 h. These pectin hydroxamic acids (PHAs; DE94T4, DE94T18, DE65T4, and DE25T4) were used to test the inhibitory activities against semicarbazide-sensitive amine oxidase (SSAO) and angiotensin-converting enzyme (ACE). Compared to different DE pectins (DE94, DE65, and DE25), the PHAs of DE94T4, DE94T18, DE65T4, and DE25T4 showed different inhibition activities against SSAO or ACE. Commercial pectins with different DE values showed negligible SSAO or ACE inhibitions. The order of SSAO inhibition was DE65T4 > DE94T18 approximately DE25T4 >> DE94T4. However, the order of ACE inhibition was DE94T4 > DE94T18 >> DE65T4 > DE25T4. The SSAO activity staining or ACE-hydrolyzed products on TLC chromatogram also confirmed the inhibitory activities of PHAs against SSAO or ACE.