Citrus Residues Isolates Improve Astaxanthin Production by *Xanthophyllomyces dendrorhous*

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The wild strain and two astaxanthin-overproducing mutant strains, W618 and GNG274, of *Xanthophyllomyces dendrorhous* were analyzed in order to assess their ability to grow and synthesize astaxanthin in a minimal medium containing (per liter): 2 g KH\textsubscript{2}PO\textsubscript{4}, 0.5 g MgSO\textsubscript{4}, 2 g KNO\textsubscript{3}, and 1 g yeast extract, and supplemented with citrus residues isolates as a carbon source (citrus medium). The selected strain W618 was evaluated under various contents of citrus juice. At the content of 20% (v/v), the highest astaxanthin production reached 22.63 mg L\textsuperscript{–1}, which was two-fold more than that observed in yeast malt medium. Addition of 8% (v/v) \textit{n}-hexadecane to the citrus medium was found to be optimal, increasing the astaxanthin yield by 21.7%.

\textbf{Key words:} Astaxanthin, \textit{Xanthophyllomyces dendrorhous}, Citrus Residue