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Effect of blanching conditions on sulforaphane content in purple and roman cauliflower (*Brassica oleracea L. var. Botrytis)*

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Brassicaceae offer many health-promoting properties due a high content of glucosinolates (glucoraphanin), whose hydrolysis through myrosinase yields sulforaphane, the most powerful anti-cancer compound derived from foodstuffs. Depending on the chemical conditions, a competition reaction occurs catalyzed the epithiospecifier protein, yielding sulforaphane-nitrile, a non-bioactive and potentially toxic compound. Epithiospecifier protein is more thermo-labile than myrosinase, then its inactivation through an adequate blanching step should be possible, thus favoring sulforaphane synthesis.

The effect of blanching conditions on sulforaphane content in roman and purple cauliflower was investigated. A factorial 2^2 design in two blocks was used; whose factors were temperature (50 and 70° C) and immersion time (5 and 15 min). Both factors affected significantly sulforaphane content. The maximum sulforaphane content was equal to 31 mmol/g dry weight, and was achieved after blanching at 70°C. Our results demonstrate that it is possible to favor, and even optimize, sulforaphane synthesis by blanching using an adequate combination of temperature and immersion time.

Biography

Andrea Mahn has completed her PhD at the age of 29 years from University of Chile. She is Associate Professor at Universidad de Santiago de Chile and head of the Biotechnology Engineering program. She has conducted more than 10 research projects. She has directed 2 Doctoral Theses, 4 Master Theses and more than 20 Undergraduate Theses. She has published more than 45 scientific articles in high level journals and has been serving as an editorial board member in reputed journals. She is active member of 2 Chilean Scientific Societies.

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