

[Available Issues](#) | [Japanese](#)>> [Publisher Site](#)
 Author: [ADVANCED](#) | Volume Page
 Keyword: |

[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1881-3984

PRINT ISSN : 1344-6606

Food Science and Technology Research

Vol. 14 (2008) , No. 1 pp.83-88

[\[PDF \(160K\)\]](#) [\[References\]](#)

Effect of Cyclodextrins on the Thermal Epimerization of Tea Catechins

[Hisako OKUMURA](#)¹⁾, [Masaki ICHITANI](#)²⁾, [Takanobu TAKIHARA](#)²⁾ and [Ko-Ki KUNIMOTO](#)¹⁾

1) Graduate School of Natural Science & Technology, Kanazawa University

2) Central Research Institute, Ito En, Ltd.

(Received: May 15, 2007)

(Accepted: August 13, 2007)

The epimerization reaction of tea catechins was investigated at pH 5.5 and 120 °C in the absence/presence of cyclodextrins (CDs). In the absence of CDs, a considerable quantity (~20%) of products originating from reactions other than the epimerization (“other products”) was formed during the epimerization of gallated catechins. In the case of (-)-EGCg, addition of β-CD to the reaction solution reduced the quantity of these other products to just a few percent, but other CDs with different cavity sizes had little effect. Generally, the addition of β-CD increased the ratio of non-epi type catechins, that is, [non-epi type catechin] / ([epi type catechin]+[non-epi type catechin]). Molecular orbital (MO) calculations using the PM3 method suggested that non-epi type catechins are more thermodynamically stable than their epi type counterparts, moving the equilibrium position in favor of non-epi type catechins in the epimerization process.

Keywords: [tea catechins](#), [thermal epimerization](#), [cyclodextrin](#), [epi type catechins](#), [non-epi type catechins](#)

[\[PDF \(160K\)\]](#) [\[References\]](#)

 Download Meta of Article [\[Help\]](#)
[RIS](#)
[BibTeX](#)

To cite this article:

Effect of Cyclodextrins on the Thermal Epimerization of Tea Catechins Hisako OKUMURA, Masaki ICHITANI, Takanobu TAKIHARA and Ko-Ki KUNIMOTO, *FSTR*. Vol. **14**, 83-88. (2008) .

doi:10.3136/fstr.14.83

JOI JST.JSTAGE/fstr/14.83

Copyright (c) 2008 by Japanese Society for Food Science and Technology



[Japan Science and Technology Information Aggregator, Electronic](#)

