

Journal of Applied Glycoscience
The Japanese Society of Applied Glycoscience

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ONLINE ISSN : 1880-7291

PRINT ISSN : 1344-7882

Journal of Applied Glycoscience

Vol. 52 (2005) , No. 3 pp.253-259



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Improvement of Potato Starch by Conjugating with ϵ -Poly(L-Lysine) through the Maillard Reaction

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(Received November 15, 2004)

(Accepted February 9, 2005)

Slightly acid-treated potato starch (ATS) granules were conjugated with ϵ -poly(L-lysine) (PL) by using the Maillard reaction. Coomassie Brilliant Blue staining indicated the conjugation of PL to ATS. The PL content of the ATS-PL conjugate was estimated to be in the range of about 1.7-2.5%. Conjugation with PL increased the gelatinization temperature, and reduced the swelling, solubility, retrogradation, and digestibility with α - or β -amylase. The ATS-PL conjugate exhibited 1/4-1/2 lower antibacterial activity toward *Escherichia coli*, *Staphylococcus aureus*, *Saccharomyces cerevisiae*, and *Candida utilis* than free PL did.

Key words: starch, functional change, ϵ -poly(L-lysine), conjugate, antibacterial activity



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To cite this article:

Wenhong Yang, Noriko Komine, Makoto Hattori, Yasuhiro Ishii and Koji Takahashi:
Improvement of Potato Starch by Conjugating with ϵ -Poly(L-Lysine) through the Maillard
Reaction . *J. Appl. Glycosci.*, **52**, 253-259 (2005) .

JOI JST.JSTAGE/jag/52.253

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