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[\[PDF \(300K\)\]](#) [\[References\]](#)**Industrial Applications of Maillard-Type Protein-Polysaccharide Conjugates**[Akio KATO](#)<sup>1)</sup>*1) Department of Biological Chemistry, Faculty of Agriculture, Yamaguchi University*

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This review summarizes the properties of Maillard-type protein-polysaccharide conjugates through naturally occurring reaction in a dry state from the viewpoint of the development of new industrial proteins. Maillard-type protein-polysaccharide conjugates showed excellent emulsifying properties superior to conventional commercial emulsifiers, heat stability, and antimicrobial activity. Therefore, the conjugates can be useful for industrial applications as natural emulsifiers, antimicrobial agents devoid of toxicity. The possibility has also been proposed that conjugation of the allergen protein with polysaccharides may be effective to reduce the allergenicity. The molecular mechanism of the improvement of functional properties of proteins by attachment with polysaccharide was elucidated using the genetically glycosylated lysozyme constructed in the yeast expression system. The polymannosylation of lysozyme was effective in improving these functional properties, while oligomannosylation was not. Although single polyglycosylation of lysozyme was adequate to improve the functional properties, double polyglycosylation was even better.

**Keywords:** [Maillard reaction](#), [protein-polysaccharide conjugates](#), [lysozyme](#), [chitosan](#), [emulsifying properties](#)

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