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[\[PDF \(657K\)\]](#) [\[References\]](#)**Development of Indigestible Dextrin**Kazuhiro Okuma¹⁾, Isao Matsuda¹⁾, Yasuo Katsuta¹⁾, Yuka Kishimoto¹⁾ and Keisuke Tsuji²⁾

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In 1988 we recognized glycosylated components in pyrodextrin and started a study to obtain an amylase-resistant ingredient. We succeeded in establishing a series of processes for industrial-scale separation of the indigestible component with superior appearance and taste by roasting starch (pyrolysis), enzymatic hydrolysis, purification, chromatographic fractionation and spray drying. The component was named indigestible dextrin (ID). In order to utilize ID as a source of dietary fiber, a low-calorie ingredient, and a physiologically active ingredient, we first confirmed that ID is a highly safe ingredient by conducting an acute toxicity study, a mutagenicity study, long-term administration studies in both rats and humans, and a study of diarrhea caused by long-term consumption. A novel determination method using the enzyme-gravimetric method in combination with high performance liquid chromatography (enzyme-HPLC method) was proposed to the Association of Official Analytical Chemists (AOAC) and approved as Final Action Method AOAC 2001. 03 in January 2005. Animal and human studies showed the energy value of 1 kcal/g dietary fiber fraction. Based on these results, ID has been approved in many countries. Moreover, it has been confirmed by both animal and clinical studies that ID has physiological functions such as intestinal regularity, moderating postprandial blood glucose level, lowering serum lipid, and reducing body fat. As for the physicochemical properties of ID, it is similar to DE10 maltodextrin in sweetness and browning property. The properties of not being fermented easily by yeast or lactobacillus impart an interesting characteristic to beer and lactic acid drinks. At present ID is commercially available for use in a wide range of food products not only in Japan but also in many countries around the world.

Key words: indigestible dextrin, dietary fiber, AOAC 2001.03, intestinal regularity,

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