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Glucose-lysine maillard reaction products and its anti-inflammatory effect of on intestinal inflammation model

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Inflammatory bowel diseases (IBDs) are chronic disorders that are characterized by intestinal epithelial inflammation and injury. Currently, the most employed therapies are antibiotics and anti-inflammatory drugs; however, the side effects limit long-term effectiveness. We evaluated the impact of glucose-lysine Maillard reaction products (Glc-Lys MRPs) on colitis, induced in rats by an administration of 5% dextran sulfate sodium (DSS) in drinking water. Glc-Lys MRPs ameliorate DSS-induced colitis, as determined by a decrease in disease index activity, colon weight/length ratio, nitric oxide levels in serum, recovery of body weight loss, colon length and serum lysozyme levels. Furthermore, Glc-Lys MRPs increase the glutathione content and the activity of glutathione peroxidase, superoxide dismutase and catalase, and inhibit lipid peroxidation and myeloperoxidase activity in colon tissues. In particular, Glc-Lys MRPs suppress the mRNA level of the inflammatory cytokines and nuclear factor- κ B in colon tissues. This study suggests the potential of Glc-Lys MRPs in preventing or treating IBDs.

Biography

Kwang-Won Lee has completed his PhD from Iowa State University and postdoctoral studies from University of Missouri. He is a Professor of Korea University. He has published more than 33 papers in SCI(E) journals since 2016 and served as Secretary General of Korean Society of Food Science and Technology in 2107.

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