

Alzheimer's disease and type 2 diabetes are very serious diseases with the latter having been suggested to cause the former. We prepared super-hard rice bread blended with black rice bran (SRBBB), which contained a high amount of resistant starch that showed strong inhibitory activities against β -secretase and acetylcholinesterase even after heating. Black rice bran showed greater β -secretase inhibitory activity (3.6-fold) than Koshihikari rice. The bran contained more oleic acid and anthocyanin, meaning that it is potentially a biofunctional food with a high antioxidant capacity. Furthermore, aged mice, which were fed a SRBBB diet for four weeks, showed lower amyloid β 40 peptide in the blood than mice fed a commercial diet ($p < 0.01$). Additionally, their initial blood glucose levels (BGLs) after 12 weeks of being fed SRBBB were significantly lower than those in the control group. Taken together, our results indicate SRBBB shows promise for inhibiting not only amyloid β production, but also abrupt increases in postprandial BGLs.

Characterization of amyloid β -40 protein species with ELISA method.

