Effect of gamma irradiation of fibroin on the antioxidant activity of its hdrolysate

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In this study, it was to evaluate the antioxidant activities of the acid hydrolysate of gamma-irradiated silk fibroin. Silk fibroin was gamma-irradiated at doses of 0, 10, 30, 50, 100, and 150 kGy, and the irradiated fibroin was hydrolyzed with hydrochloric acid (2N). The antioxidant activities were evaluated by the 2-diphenyl-1-picrylhydrazyl radical scavenging activity, ferric reducing/antioxidant power, and inhibition of lipid peroxidation. All antioxidant parameters of the hydrolysates increased proportionally with the irradiation dose up to 50 kGy. These results suggest that gamma irradiation could improve the antioxidant properties of fibroin-derived hydrolysate.