ABSTRACT

Aging is one of the most complicated process described as the functional decline of various biological activities of living organisms. Aging is an irreversible and inevitable process leading to age-related diseases like cardiovascular diseases, musculoskeletal disorders, neurodegenerative diseases, and cancer. It has been proved over the past few decades that plant-based polyphenols can delay senescence by regulating the oxidative stress. Curcumin, a polyphenolic natural compound derived from turmeric has several biological benefits, including anti-inflammatory, anti-cancerous and anti-aging properties. Sericin is a natural protein extracted from silk cocoon having numerous commercial and industrial benefits. Curcumin and sericin have potential to ameliorate oxidative damage and can cause a positive impact on age-related biomarkers like SOD, GSH, etc. to delay the aging process. In this experiment D galactose aging model was established by injecting D galactose (250mg/kg/day) for 8 weeks. D-gal Model solely given D-galactose. Positive control group orally received standard drug Metformin at the rate of 100 mg/kg/day. Sericin-I, Sericin-II and Sericin-III groups were given respectively with 50 mg/kg/day, 100 mg/kg/day and 150 mg/kg/day along with D galactose. Curcumin-I, Curcumin-II and Curcumin-III group provided with 100,200 and 400mg/kg/day Curcumin respectively along with D galactose. High doses of Sericin and Curcumin showed promising results by decreasing organ weights and increasing the amounts GSH and SOD aging biomarkers. The present study offers a new therapy approach for delaying age-related disorders of liver, kidney and spleen through natural anti-aging agents like sericin and curcumin.

Key words: sericin, curcumin, anti-aging, D galactose model, aging biomarkers