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Poster Presentation

Protective Effects of Crocin on D-Galactose Induced Aging Model in Human Neuroblastoma Cells

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Abstract

Introduction: D-galactose (D-gal) is well known as an appropriate agent to induced aging effects in the in vivo and in vitro models. In the present study, we selected crocin, the main constituent of Crocus sativus L. (Saffron), against D-gal cytotoxicity in human neuroblastoma SH-SY5Y cells. **Materials and Methods:** Cells were pretreated with crocin (25-500 µM) for 24 h and then exposed to D-galactose (25–400 mM) for 48 h. MTT assay was used for Cell viability investigation and dichlorofluorescin diacetate assay (DCF-DA) was used to evaluate the generation of reactive oxygen species,. Betagalactosidase aging marker studied in D-gal treated cells at 200 mM with or without 24 h crocin 500 µM pretreated. Also advanced glycation end products (AGEs) expression which are known as the main mechanism of age-related diseases were measured by western blot. **Results:** The finding of our study showed that treatment of cells with D-gal significantly decreased cell viability and Senescence *beta-galactosidase* (SA-Bgal) staining positive cells. Also D-gal caused increase in carboxymethyl lysine (CML) expression, is an AGE protein, and reactive oxygen species (ROS) level which are the main factors in age-related diseases. Crocin pretreatment significantly reduced D-gal neurotoxic effects. **Conclusion:** Treatment of SH-SY5Y cells with crocin before adding of D-gal dose dependency restored aging effects of D-gal. This finding indicated that crocin has potent anti-aging effects through alleviating of AGEs and ROS formation.

Keywords: D-galactose, Crocin, Aging, SHSY٥-Y cells

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