Journal of Microbiology and Immunology

Abstract

Andrographis Paniculata and its Bioactive Diterpenoids Protect Dermal Fibroblasts against Inflammation and Oxidative Stress

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Abstract:

Andrographis paniculata (Burm.f.) has long been used in ayurvedic medicine through its anti-inflammatory properties. However, its protective effect of skin aging has not been studied in vitro. This study aimed to investigate the anti-aging effects of methanolic extract (ME), andrographolide (ANDRO), neoandrographolide (NEO), 14-deoxyandrographolide (14DAP) and 14-deoxy-11,12-didehydroandrographolide (14DAP11-12) on human dermal fibroblasts (HDFa) under pro-oxidant or pro-inflammatory condition. The in vitro anti-aging capacity of ME, ANDRO, NEO, 14DAP, and 14DAP11-12 (1, 2.5 and 5 µg/mL) was performed in HDFa. Oxidative stress and inflammation were induced by hydrogen peroxide and lipopolysaccharide/TNF-α, respectively. Reactive oxygen species (ROS) production was measured by the fluorescence of DCF-DA probe and cytokines were quantified by ELISA (IL6 and IL8) or RTqPCR (TNF-α). Procollagen type I production was determined by an ELISA. Our results showed a decrease in ROS production with ME and 14DAP at 5 µg/mL and 1 µg/mL, respectively. Furthermore, IL-6 production and TNF-α expression decreased under ANDRO and ME at 5 µg/mL. Our data indicated that ME and 14DAP protect from oxidative stress. Additionally, ME and ANDRO decreased an inflammation marker, IL-6. This suggests their potential natural treatment against skin damage. Hence, their applications could be of interest in cosmetics for preventing skin ageing.

Biography:

Eugenie Mussardis currently accosiated with University of Orleans, France

Recent Publications:

1. Antioxidants (Basel). 2020 May 15;9(5):432. doi: 10.3390/antiox9050432

Webinar on Immunology | August 30, 2020 | Osaka, Japan

Citation: Eugenie Mussardis; Andrographis Paniculata and its Bioactive Diterpenoids Protect Dermal Fibroblasts against Inflammation and Oxidative Stress; Immunology Webinar 2020; August 30, 2020; Osaka, Japan