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Título: The Investigation of The Network Pharmacology and Mechanism of Action of Centella Asiatica Extract on The Atopic Dermatitis Model.

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Resumen: Background: Atopic dermatitis (AD) is a chronic relapsing inflammatory skin condition which has a negative impact on children health. The well-known medicinal plant Centella asiatica extract (CE) is used in herbal skin care products to produce various pharmacological effects in dermatology. However, the molecular target of CE in suppressing inflammatory is largely unknown. Objective: the aim of this study was to examine anti-inflammatory properties and network pharmacology of CE in lipopolysaccharide (LPS)- induced AD in vitro model. Method: RAW264.7 cells were pre-treated with CE and then were stimulated with LPS and then were investigated cell viability, NO production, and the levels of pro-inflammatory mediators. In addition, the Search Tool for Retrieval of Interacting Genes (STRING), SwissTargetPrediction and the Kyoto Encyclopedia of Genes and Genomes (KEGG) were used to construct the defined mechanism of action and network pharmacology. Results: CE showed the potent inhibitory effects on LPS-induced NO. In addition, CE significantly suppressed the expression of iNOS and COX-2, as well as the production of IL-2, IL-6, IL-10, and TNF-a. Furthermore, the network pharmacological analysis revealed the potential role of CE

in biological processes such as regulating JAK/STATs pathway and inhibiting proinflammatory cytokines both of which were linked to AD pathogenesis. Conclusion: Our findings confirm our hypothesis that CE could be developed as a therapeutic therapy for atopic dermatitis due to its pharmacological action and signaling mechanism in the modulation of allergic skin inflammation. [ABSTRACT FROM AUTHOR]

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