## عنوان مقاله:

Gambogic acid inhibits LPS-induced macrophage pro-inflammatory cytokine production mainly through suppression of the p۳۸ pathway

## محل انتشار:

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## خلاصه مقاله:

Objective(s): In traditional Chinese medicine, gamboge can detoxify bodies, kill parasites, and act as a hemostatic agent. Recent studies have demonstrated that gambogic acid (GBA) suppressed inflammation in arthritis, and also presented antitumor effect. Thus, this study investigated the new biological properties of GBA on macrophages.Materials and Methods: RAW ۲۶۴.۷ cells were pretreated with GBA at different concentrations (۱۰, ۲۰, ۴۰, ۸۰, ۱۶۰, ۳۲۰ nM) for ۲۴ hrs, and then cell viability was measured using Cell Counting Kit (CCK)-۸ assays. Pro-inflammatory cytokines such as TNF-α, IL-۶ and IL-۱β were determined using ELISA kits and qPCR. Then nitrite concentration was calculated according to a standard curve. At last, the effect of GBA on MAPK and NF-κB signaling pathways was assessed by western blot and luciferase reporter gene assay.Results: GBA (IC۵۰: ۲۶۰ nM) suppressed the TNF-α, IL-۶ and IL-۱β expression induced by lipopolysaccharide (LPS) in RAW ۲۶۴.۷ cells. The expression of TNF-α, IL-۶ and IL-۱β decreased to ۳۰-۵۰% and ۷۰-۷۵% in the high-dose (۱۶۰ nM) and low-dose (۴۰ and ۸۰ nM) GBA groups, respectively. Furthermore, the nitric oxide (NO) production and the activation of NF-κB, ERK, and JNK pathways were significantly reduced in high-dose (۱۶۰ nM) GBA only, while p۳۸ pathway was inhibited at both low (۴۰

and ۸۰ nM) and high (۱۶۰ nM) concentration of GBA. Conclusion: These data suggested that GBA inhibited LPS-induced production of pro-inflammatory cytokines including TNF-α, IL-۶ and IL-۱β mainly through the suppression of the p۳۸ pathway.

## کلمات کلیدی:
Anti-inflammatory agents, Gambogic acid, MAPK, NF-κB, p۳۸, RAW ۲۶۴.۷ cells