

## عنوان مقاله:

Effect of carvacrol on various cytokines genes expression in splenocytes of asthmatic mice

## محل انتشار:

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## نویسندگان:

Majid Kianmehr - *Neurogenic Inflammation Research Center and Department of Physiology, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*

Abdolrahim Rezaei - *Inflammation and Inflammatory Diseases Research Center, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*

Mohammad Hossein Boskabady - *Neurogenic Inflammation Research Center and Department of Physiology, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*

## خلاصه مقاله:

**Objective(s):**With regard to pharmacological effects of carvacrol on the respiratory system, its effect on cytokines genes expression in splenocytes of asthmatic mice was examined in this study. **Materials and Methods:**Splenocytes were isolated from non-sensitized (control group), sensitized mice to ovalbumin (OVA) (group S), and S animals treated with dexamethasone, and three concentrations of carvacrol. IL- $\alpha$ , IFN- $\gamma$ , TGF- $\beta$ , FOXP $\alpha$ , and IL-1 $\gamma$  genes expression were carried out in cultured splenocytes using the real-time PCR method. **Results:**Compared to the control group, IFN- $\gamma$  and FOXP $\alpha$  genes expression were significantly decreased ( $P < 0.001$  for both cases), but IL- $\alpha$  and IL-1 $\gamma$  genes expression were significantly increased in the S group ( $P < 0.001$  and  $P < 0.05$ , respectively). IL- $\alpha$  gene expression due to treatment of all concentrations of carvacrol, TGF- $\beta$  gene expression due to its two higher concentrations, and IL-1 $\gamma$  gene expression due to its high concentration were significantly decreased compared to group S ( $P < 0.01$  to  $P < 0.001$ ). IFN- $\gamma$  gene expression was significantly increased due to last carvacrol concentration ( $300 \mu\text{g/ml}$ ,  $P < 0.01$ ), and FOXP $\alpha$  due to its two last concentrations ( $150$  and  $300 \mu\text{g/ml}$ ,  $P < 0.05$  and  $P < 0.001$ , respectively) in treated S splenocytes. Dexamethasone treatment of sensitized splenocytes only showed significant inhibitory effect on IL- $\alpha$  and TGF- $\beta$  genes expression ( $P < 0.001$  for both cases). **Conclusion:** These results showed the immunomodulatory effect of carvacrol indicating increased IFN- $\gamma$  and FOXP $\alpha$  but decreased IL- $\alpha$ , TGF- $\beta$ , and IL-1 $\gamma$  genes expression, which was more selective than the effect of dexamethasone in sensitized mice splenocytes, which indicates its possible therapeutic value in allergy, autoimmunity, and infectious diseases.

## کلمات کلیدی:

Carvacrol, Cytokines, Gene expression, Real-time PCR, Splenocyte

## لینک ثابت مقاله در پایگاه سیویلیکا:

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