

عنوان مقاله:

Promising effects of formononetin, a natural isoflavone derived from herbs, against *Toxoplasma gondii*

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خلاصه مقاله:

Introduction: Formononetin (FMN) is a natural isoflavone found in many plants. This work examined the anti-Toxoplasma effects and cytotoxicity properties of FMN on *Toxoplasma gondii*. **Methods:** Effects of FMN (۲-۶۴ µg/mL) on tachyzoites forms were measured by cell viability assay for ۴۸ hours. The effects of different concentrations of FMN on infectivity rate, intracellular parasites, and nitric oxide (NO) in macrophage cells (J۷۷۴-A۱) were also evaluated. **Results:** FMN markedly ($P < 0.001$) reduced the viability rate of tachyzoites forms with an IC_{50} value of ۹.۸۵ µg/mL. FMN also declined the rate of intracellular tachyzoites whereas, FMN increased the FMN production in macrophage cells. **Conclusion:** The results of the present in vitro study revealed the favorable anti-Toxoplasma effects of FMN against tachyzoites and intracellular forms of *T. gondii*. Although the accurate anti-Toxoplasma mechanisms of FMN are not clear, our results showed that triggering the NO production might be considered one of the main mechanism actions of FMN for controlling and eliminating *T. gondii*. However, further surveys are mandatory to assess the effects of FMN in animal models and to evaluate its accurate mechanism actions before its use in clinical phase.

کلمات کلیدی:

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