

عنوان مقاله:

The In-vitro effects of culture free supernatant and sonicated pellet of *Pseudomonas aeruginosa* on growth of *Leishmania major* amastigotes and promastigotes

محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: 1398)

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خلاصه مقاله:

Background and Aims: Cutaneous leishmaniasis is an endemic disease with notorious public health effects in Iran. Today, the use of bacterial toxins in the treatment of parasitic diseases is considered. In this study the In-vitro effects of the cultured *P. aeruginosa* (cell free supernatant; CFS, and sonicated pellet; SP) on growth of *L. major* was evaluated. Methods: *P. aeruginosa* strains ATCC 27853, and two different clinical strains of *P. aeruginosa* harboring genes for the four effector proteins (exoS, exoU, exoY and exoT) were used. The presence of exo genes was previously confirmed by PCR method in these isolates. CFS and SP were prepared from 24 hours' culture of the bacteria, and their protein content was determined by Pyrogallol Red method. *L. major* strain MRHO/IR/75/ER and murine macrophage cell line (J774.a) were used for evaluation of CFS and SP on growth of *L. major* using the MTT test and Giemsa staining. Results: The *P. aeruginosa* CSF and SP do not have any significant impact on the *Leishmania* promastigote forms after 24, 48 and 72 hours of incubation. However, a significant impact of both CFS and SP on the amastigote forms of *L. major* was observed. The CFS was more potent than the SP especially in the case of clinical strains. The time required for complete eradication of amastigotes was between 1 to 3 hours for CFS and 3 to 5 hours for the SP, while for standard strain the time for total eradication was between 20 to 24 hours. Conclusions: The present study showed a good antileishmanial activity in CFS and SP of strain of *P. aeruginosa* harboring exo genes on amastigote forms of *L. major*. Further work on this bacterium and its effect on *L. major* may results in an unexpected treatment option for this parasite.

کلمات کلیدی:

.Cutaneous leishmaniasis, *Pseudomonas aeruginosa*, *Leishmania major*, Amastigote, Promastigote

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