

عنوان مقاله:

The study of ferritin-binding proteins in *Streptococcus pneumoniae* proteome

محل انتشار:

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

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خلاصه مقاله:

Introduction and Objectives: Iron is the one of the vital elements for bacteria and they absorb it from limited Iron sources. Ferritin is an intracellular and extracellular protein that stores iron into cells and releases it in a controlled manner. The present study was aimed to identify the ferritin-binding proteins from *Streptococcus pneumoniae*. **Materials and methods:** *S.pneumoniae* was cultured in BHI broth containing ferritin (1094 ng/ml) at 37°C for 4h and ferritin levels were measured using ELISA assay. Bacterium was separately cultured in BHI broth and its proteome were electrophoresed in SDS-PAGE and transferred in PVDF nitrocellulose membrane. In the next step the membrane incubated into ferritin solution and finally, the identification of ferritin-binding proteins carried out using anti-ferritin monoclonal antibody conjugated to HRP enzyme. **Result:** The western blot analysis revealed that there were not any proteins with binding activity to ferritin. Ferritin levels were significantly ($p < 0.05$) decreased following bacterium growth in medium containing ferritin. **Conclusion:** The western blot analysis reveals that *S. pneumoniae* doesn't have ability to produces ferritin-binding proteins and it is unable to use ferritin as Iron source, directly. However, the decreasing ferritin levels following bacterium growth in medium containing ferritin show that Iron may be provided by *S.pneumoniae* using a protease-mediated ferritin destroying mode.

کلمات کلیدی:

Streptococcus pneumoniae, ferritin-binding proteins, proteome

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