



Journal of Medical Science, Biology, and Chemistry (JMSBC)

ISSN: 3079-2576 (Online)

Volume 2 Issue 2, (2025)

<https://doi.org/10.69739/jmsbc.v2i2.991>

<https://journals.stecab.com/jmsbc>

Published by
Stecab Publishing

Research Article

Assessment of Virulence Gene Expression in *Entamoeba* Strains from Basrah, Southern Iraq

*Duaa Mardan Khalid, ¹Athraa A. A. Al-Hilfi, ¹Najwa M. J. A. Abu-Mejdad

About Article

Article History

Submission: August 05, 2025

Acceptance: September 09, 2025

Publication: September 13, 2025

Keywords

Amoeba Pores (AP), Amoebiasis, Cystine Protease (CP), *Entamoeba*, Gal/GalNAc Lectin, Real Time PCR

About Author

¹ Department of Biology, Science College, Basrah University, Iraq

Contact @ Duaa Mardan Khalid
pgs.duaa.mardan@uobasrah.edu.iq

ABSTRACT

Entamoeba histolytica is the primary protozoan parasite causing amoebiasis, a disease characterized by diarrhea and dysentery. *Entamoeba histolytica* trophozoites develop a virulent phenotype that leads to intestinal tissue invasion and the onset of amoebiasis symptoms. Quantitative real-time PCR (qRT-PCR) was performed to quantify the expression levels of selected virulence genes cysteine protease (CP), amoebapore B (AP), and Gal/GalNAc lectin (GAL) in *Entamoeba* strains. Our findings showed that assessing the expression of three key virulence genes cysteine protease (CP), amoebapore (AP), and Gal/GalNAc lectin (GAL) in *Entamoeba* strains. The results revealed low CP expression across all strains, suggesting reduced invasive ability. High AP expression was observed in DM24, DM33 for *E. moshkovskii* strains, indicating strong cytolytic potential, while *E. histolytica* DM5 showed lower AP levels. GAL expression was elevated in *E. histolytica* DM1 and DM5 and *E. moshkovskii* DM33, pointing to effective adhesion, but was significantly lower in *E. moshkovskii* DM24, indicating impaired virulence. Overall, the study highlights strain-specific differences in virulence gene expression among *Entamoeba* strains. The study focused on evaluating the expression of key virulence genes in *Entamoeba* strains from Basrah, highlighting strain-specific differences that influence their pathogenicity. By analyzing genes involved in tissue invasion, cytolysis, and adhesion, the research provides insights into the varying disease-causing potential of different

Citation Style:

Khalid, D. M., Al-Hilfi, A. A. A., & Abu-Mejdad, N. M. J. A. (2025). Assessment of Virulence Gene Expression in *Entamoeba* Strains from Basrah, Southern Iraq. *Journal of Medical Science, Biology, and Chemistry*, 2(2), 152-158. <https://doi.org/10.69739/jmsbc.v2i2.991>

