

## Structural and genetic diversity of *Entamoeba gingivalis* trophozoites isolated from diseased and healthy periodontal sites

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### ABSTRACT :

#### Background:

At present, there is little documented about the variability aspects of *Entamoeba gingivalis* (*E. gingivalis*) in relation to periodontal diseases. This is perhaps due to several specialists rejecting the notion that *E. gingivalis* can cause periodontal disease. The aim of the present study was to compare the morphological and genetic variability within trophozoites isolated from diseased (n = 26) and healthy periodontal sites (n = 14).

#### SUBJECTS, PATIENTS, AND METHODS:

Detailed microscopic analyses were performed, in addition to post real-time polymerase chain reaction 18S-SSU rRNA gene scanning technology, using reference synthetic genes to analyze melting curve features from different isolates.

#### Results:

All trophozoites isolated from diseased sites were significantly larger in size than those isolated from healthy sites. In addition, they were found in clusters, containing many leukophagocytes and in a significantly higher number than those from healthy sites. Gene scanning revealed diversity within the isolates with a significantly higher number of mutant forms (18 out of 26) within the trophozoites isolated from diseased sites, 14 of them were of unknown origin. Four melting curves *matched the E. gingivalis* H57 strain and the remaining 8 were related to the wild strain (ATCC-30927). Isolates from healthy sites corresponded to the wild type (12 out of 14) with only 2 related to H57 strain.

#### Conclusion:

The study confirmed morphological and genetic variability between different isolates; we still recommend further in-depth molecular studies to investigate the role of this oral protozoan in the pathogenicity of periodontal affection. The study highlighted the importance of real engagement of multidisciplinary diagnostic strategies, involving experts from variable medical fields to reach truthful scientific outcomes concerning the association of certain microorganism to particular diseases or disorders.

**Keyword:** *Entamoeba gingivalis* – genotypes- real time PCR- HRM- mutants