

A FURTHER PROTEOMIC STUDY ON THE EFFECT OF IRON IN THE HUMAN PATHOGEN *TRICHOMONAS VAGINALIS*

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Iron plays a critical role in the host-parasite interaction, and modulates the expression of virulence factors in *Trichomonas vaginalis*. Parasites grown in iron-rich and iron-depleted media were analyzed by light and scanning electron microscopy, and two-dimensional electrophoresis and mass spectrometry. Withdrawal of iron from the culture medium resulted in dramatic changes in both the morphology and in the proteome pattern of *T. vaginalis*. Trophozoites underwent transformation from ellipsoid or amoeboid forms to rounded cells, whose flagella and axostyle were internalized. Forty-five proteins differentially expressed in parasites cultivated in the absence of iron were identified. In iron-depleted parasites, enzymes involved in energetic metabolism, proteolysis and hydrogenosomal iron-sulfur (Fe-S) proteins were down-regulated or even suppressed. Among up-regulated proteins, 6 isoforms of actin were detected. In addition, phosphoenolpyruvate carboxykinase, putative lactate dehydrogenase and putative adenosinetriphosphatase were also up-regulated or were exclusively observed in gels related to iron-depleted parasites. Our data demonstrate that iron has a pivotal role in the regulation of the morphological transformation of *T. vaginalis* and modulates the expression of both iron-sulfur and non iron-sulfur proteins in the parasite.