

*Giardia lamblia*: microtubule cytoskeleton distribution in trophozoites and cysts using fluorescent taxoid

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*G. lamblia* is a protozoan parasite of small intestine and the etiologic agent of giardiasis. The parasite presents a complex cytoskeleton composed of microtubules. In this study, the microtubule cytoskeleton distribution in trophozoites and cysts of *G. lamblia* was investigated, using a fluorescent taxoid (FLUTAX-2). FLUTAX-2, a fluorescent derivate of Taxol, binds to  $\alpha\beta$ -tubulin dimer polymerized, competing with Taxol for the same binding site. In addition, the effect of metronidazole on the cytoskeleton of the parasite was also evaluated. FLUTAX-2 was able to label the microtubules of trophozoites and cysts, allowing the observation of cytoskeletal structures, such as the flagella, the funis, the adhesive disk and the median body. Moreover, FLUTAX-2 labeled the trophozoites from several different cultivation times, revealing 48 hours as the best incubation period. The incubation of parasites in presence of metronidazole did not show significant alteration on the microtubule distribution. These results contribute to the knowledge of biological and morphological features of *G. lamblia*. Furthermore, our data showed no modification of microtubule profile labeling in presence of metronidazole, contributing to the understanding of the mechanism of this drug. Finally, a new perspective for giardiasis diagnostic is suggested, since trophozoites and cysts of *G. lamblia* were labeled with FLUTAX-2.

Keywords: *Giardia lamblia*, cytoskeleton, fluorescent taxoid, FLUTAX-2, microtubule

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