**Abstract**

It is known that hypersensitivity reactions in the gastrointestinal tract, which are primarily mediated by mast cells, are associated with a secretory response of the epithelium and often increased permeability to macromolecules. Studies to date have not examined the effects of hyperpermeability on the absorption of toxic substances normally present in the intestinal lumen such as bacterial LPS. In the present study, we observed that *Strongyloides venezuelensis* infection in mice decreases the mRNA expression of intestinal epithelial cell junctional molecules (occludin and zonula occludens 1) and increases portal endotoxin levels 4 h after intragastric administration of LPS (20 mg/kg body weight). Furthermore, an increase in the flux of immunoglobulin G into the intestinal lumen was observed 10 days postinfection (PI). An increased rate of LPS absorption was also seen in mice infected with *Nippostrongylus brasiliensis* on day 14 PI and rats concurrently infected with *S. venezuelensis* and *N. brasiliensis* on day 20 PI. On the other hand, infection with *Eimeria vermiformis* and *Eimeria pragensis* was not observed to enhance LPS absorption 4 h after intragastric administration of LPS (20 mg/kg body weight), although *E. vermiformis* infection did inhibit the epithelial cell mRNA expression of zonula occludens 1, but not occludin, on day 9 PI, resulting in a reduced immunoglobulin G flux than that produced by *S. venezuelensis* infection. Our results suggest that mastocytosis accompanying intestinal nematode infection increases the intestinal absorption of LPS into the portal circulation by suppressing the expression of tight junction molecules.