

Suppression of host Th1-type granulomatous inflammation by *Taenia solium* metacestodes is related to down-regulation of osteopontin gene expression

范家堃

Wang IC;Fan PC;Lu SC;Fan CK;Su KE

摘要

Abstract

Inflammation and granuloma formation in human neurocysticercosis has been attributed to Th1-type immune responses of the host. In the present murine model, over 94% of *Taenia solium* metacestodes were viable and elicited no granulomatous inflammation, whereas parasites killed by praziquantel treatment elicited rapid granuloma formation that calcified within 2 weeks. Osteopontin (OPN) is a Th1-related cytokine that is upstream of IL-12 and which may play an essential role in granuloma formation and calcification. OPN mRNA expression was down-regulated in tissues surrounding viable cysticerci, but was up-regulated in inflammatory tissues surrounding degenerating cysticerci. Moreover, co-culture with a viable cysticercus or ES products from these metacestodes led to a decrease in OPN, IFN- γ and IL-12 expression, whereas co-culture with somatic proteins enhanced OPN expression by leukocytes. Addition of recombinant mouse OPN (rmOPN) counteracted the down-regulation of IL-12 and IFN- γ mRNA expression, but not OPN mRNA expression, in leukocyte cultures. Furthermore, injection of rmOPN into the tissues surrounding implanted cysticerci enhanced inflammatory responses while a similar injection of an anti-rmOPN antibody reduced inflammation. These findings suggest that the suppression of host Th1-type granulomatous inflammation by ES products from *T. solium* metacestodes is related to down-regulation of OPN gene expression.