

In Vitro Elicitation of Intestinal Immune Responses in Teleost Fish: Evidence for a Type IV Hypersensitivity Reaction in Rainbow Trout 2007, Vol. 29, No. 1, Pages 69-80 (doi:10.1080/08923970701282544)

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Abstract

In fish the gut immune system has been the subject of few investigations until now. Here, we provide novel morphological and immunological data on the gut isolated from rainbow trout *Salmo gairdneri*. The pyloric (P) and terminal (T) segments of trout gut, when morphologically examined, evidenced lymphocytes and macrophages (MØ) loosely dispersed in the intestinal mucosa and in the lamina propria in the absence of typical Peyer's patches-like structures. Furthermore, incubation of P and T sections with *Candida albicans* (Ca) and functional analysis of supernatants generated some interesting results. In fact, active supernatants, when compared with controls, exhibited cytokine-like activities attributable to the presence of interferon (IFN)- γ and migration inhibiting factor (MIF), respectively. In particular, IFN- γ -like activity gave rise to an enhancement of Ca phagocytosis by MØ, whereas MIF inhibited MØ migration in agarose. Taken together, these in vitro data suggest that the gut-associated lymphoreticular tissue in fish possesses the appropriate armamentarium to mount a type IV hypersensitivity response when challenged by microbial antigens

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