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# New results in invertebrate pathogens recognition: a new approach supporting new concepts ?

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## Abstract

Host-pathogens interaction in invertebrate relies on the recognition of several membrane-associated proteins from the pathogen by the host. The pathogen associated molecular patterns (PAMPs) are recognized by immune receptors (pathogen recognition receptors, PRRs) to engage immune response pathways. These receptors are carried at the surface of immune-cells in hemolymph or are released in the plasma. Generally, immune receptors are characterized by using complex purification and biochemical interaction from host and pathogens protein extractions. Here, we present a new alternative simple method relying on a short-time incubation (20') between fresh cell-free hemolymph from host and the entire living pathogen. Only outer membrane-bound proteins of the pathogen are exposed and recognized by native soluble proteins from hemolymph, as it would be within the host. Proteomic profiles (2D-PAGE) of the pathogen are compared with profiles of the pathogen that interacted with proteins from the hemolymph. By this mean, proteins that appears in the second case correspond to interacting proteins from the host and are of interest. This simple and highly reproducible protocol allowed us to identify and characterize specific binding protein from host to different pathogens during immune recognition, which opens the way to a better understanding of the specificity of the immune response in the Schistosomiasis vector snail, *Biomphalaria glabrata*.

**Keywords:** Biomphalaria, innate immunity, Pathogen recognition receptors, Host/pathogens, Proteomic

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