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Cryptosporidium: Current achievements and research needs

The purpose of this presentation is to provide an overview in the evolution of research in the field of *Cryptosporidium* and it consists of two parts: Developing strategies to increase the detection methods for Cryptosporidium and Evolution and achievements in developing the in vitro axenic culture system to accelerate the development of new therapies for Cryptosporidium infections. The review is intended to stimulate research leading to development of future improvements and further developments in water monitoring methodology for Giardia, Cryptosporidium and other potentially waterborne protozoan parasites. The objective of generating more consistent and reliable data should lead to better understanding of the occurrence, transport and fate of these organisms in water. Cryptosporidium poses the biggest threat to the water industry as, initially, many outbreaks were caused by this 'now well known' parasite which penetrated multi-barrier water treatment systems that were thought to be effective in providing 'safe' drinking water. The second part of the presentation report findings for culturing Cryptosporidium in axenic cultures and the development of this pathogen in cultivations system during recent years, research efforts and achievements. Due to a historical lack of *in vitro* axenic culture system for both basic and applied research in Cryptosporidium, particularly for drugs development and therapy to cure pediatric disease, this task is behind many others in available tools for research. Regarding the current stage of the in vitro cultivation either in axenic culture system, more information on Cryptosporidium developmental biology has been be achieved by focusing on the ability of Cryptosporidium to grow under different conditions in the laboratory. Improved methods in both clinical and environmental settings are required to maximize public health surveillance, while the development of the standard culture system it will provide better insight into the life cycle and developmental biology of Cryptosporidium and provide the platform for strategies such as vaccines and therapeutics with the potential to protect against the acquisition of cryptosporidiosis. A 'new era' in the research field of Cryptosporidium research is the horizont.

Biography

Panagiotis Karanis has obtained his PhD in Parasitology from Bonn University. Following Postdoctoral research activities in Germany, Greece, Australia, Japan, Canada, Thailand and China; he has been working in the field of medical, epidemiological and molecular Parasitology taken into account both the pathogen and the disease. His worldwide research activities focused in the control of water-borne and vector-borne parasitic diseases including the development of diagnostic assays useful for basic and clinical platforms in the field of biomedicine.

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