

Biological resources for health care programs and epidemiological control in Brazil

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The Brazilian biodiversity reserves are among the greatest in the world. Part of this biodiversity is expressed by a variety of infectious agents, as well as their arthropod or other animal vectors and reservoirs that serve as host for these pathogens, living together in different ecosystems that implies in diverse epidemiological patterns of transmission. The current environmental impact caused by modern life disbalances this biodiversity, which in a direct proportion to its dimension, might result in an increased disease incidence. Most of vector-borne pathogens and the diseases caused by them are concentrated in the tropics, found in the rich biodiverse tropical rain forest ecosystems and the edges of these ecosystems. Concurrently, this same biodiversity, rather than being a problem, may also represent a solution either as biological control of human disease-causing species or through the production of bioactive compounds that can be used for therapy. Microorganisms, the most diverse organisms on the planet, are a rich biological resource for present and future benefits in medicine; they are applied in the production of biocompounds or as biocontrol agents. Many of these agents are the cause of neglected tropical diseases, which contribute to the maintenance of the poverty and social inequity. They are responsible for significant morbidity and mortality since one sixth of the world's population suffers from one or more neglected tropical diseases. Within this context, Fiocruz has different culture collections, ranging from bacteria, protozoa or fungi, and is now developing a project of building a Biological Resource Center for Health (BRC - Health) – unique in the world – of microorganisms related mainly to neglected diseases of Latin America in order to support scientific research, epidemiology surveillance, as well as the development and production of biocompounds directed to diagnosis, vaccines and drugs.