

BIODIVERSITY: MEDICINALS FOR THE MILLENNIA

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Over the millennia, natural products, mainly of plant origin, have been used for the treatment of diseases, and an impressive number of modern drugs have been isolated from natural sources. The past century, however, has seen the increasing importance of microorganisms in the production of the antibiotics and other drugs for the treatment of diseases ranging from bacterial infections to cardiovascular problems and cancer. Much of the world's biodiversity remains unexplored as a source of novel drug leads, and the search for new bioactive agents from natural sources, including extreme environmental niches, is expanding. In this respect, the majority of microbes have, thus far, defied culture, and advances in procedures for microbial cultivation and the extraction of nucleic acids from environmental samples is providing access to the vast untapped reservoir of microbial genetic and metabolic diversity. Southeast Asia is a region of rich biodiversity with tremendous potential for drug discovery and development. The potential may be optimized through the promotion of national and international collaborations, and the National Cancer Institute (NCI) has established collaborative agreements with organizations in several source countries for the exploration of their natural resources as sources of potential anticancer agents. Collaborative agreements include terms covering factors such as the confidential exchange of data, possibilities for training and technology transfer, patent applications, large-scale resupply of source organisms, and benefit-sharing options.