New Drugs for Neglected Diseases in Latin America

A new project initiated by the Subcommittee on Medicinal Chemistry and Drug Development has been initiated to raise awareness of neglected diseases in Latin America, and encourage researchers to select them as subjects for new drug research.

In Latin America and the Caribbean regions, at least 210 million people live below the poverty line. This is approximately 40 percent of the population. These impoverished and marginalized populations are heavily burdened with neglected tropical diseases (NTDs). While many of the NTDs do not directly cause high rates of morbidity, they contribute to an enormous rate of morbidity, and a drastic reduction in income for the most poverty-stricken families and communities.[1] Based on their prevalence, and on healthy life years lost from disability, hookworm infection, other soil-transmitted helminth infections, and Chagas disease are the most important NTDs in Latin America and the Caribbean, followed by dengue, schistosomiasis, leishmaniasis, trachoma, leprosy, and lymphatic filariasis.[2]

The solutions to this situation do not just depend on having appropriate drugs, but are complex, involving public health, disease control, education, and the political will. Even so, having appropriate drugs would be very helpful. There are some drug programs. For example, Novartis has established the Novartis Institute for Tropical Diseases in Singapore, which is focused especially on dengue fever, tuberculosis, and malaria. Another example is the Institute for One World Health, which is a nonprofit pharmaceutical company founded in 2000 to develop safe, effective, and affordable new medicines to treat infectious diseases in the developing countries; it is especially supported by the Bill & Melinda Gates Foundation. Two drugs were under development[3] to treat Chagas disease in Latin America. These were K777, a cysteine protease inhibitor from Celera Genomics, and a series of sterol biosynthesis inhibitors licensed from Yale University and the University of Washington. The compound K777, however, was hepatotoxic and its development was abandoned. The Yale/Washington compounds were also abandoned.

The new project aims to identify chemistry researchers and testing laboratories, and their equipment and facilities, currently working in Latin America to discover new drugs to treat NTDs. The project chair, Antonio Monge (Centre for Investigation in Applied Pharmacobiology, University of Navarra, Pamplona, Spain), has many contacts in Latin America, and visits the subcontinent several times each year. He is very well placed to lead this effort. There is also a website that has been set up for Neglected Diseases (Enfermedades Olvidados), sponsored by the Spanish Academy of Pharmacy (Real Academia Nacional de Farmacia de España), in collaboration with all the Latin American Academies of Pharmacy: www.malaria2.enfermedadesolvidadas.com> (in English: www.enfermedadesolvidadas.com/english.html)

The next stage will be to stimulate other medicinal chemists in Latin America to conduct research in this area, and make contacts between them and the testing laboratories. Thus, the project will be promoting self-help. By creating such a network of researchers it should also be possible to tap into some of the philanthropic funding available.

Candidate drugs for possible development could be offered to local pharmaceutical laboratories, or one might seek the assistance of the Institute for One World Health.

If the project succeeds it would serve as a model for similar efforts in other areas of the world[4] (e.g., India and Southeast Asia).

References

1. J. C. Holveck et al, *BioMed Central Public Health*, 2007, 7, 6. doi:10.1186/1471-2458-7-6
2. P.J. Hotez et al, *Public Library of Science, Neglected Tropical Diseases*, 2008, 2 (9)e300
3. http://en.wikipedia.org/wiki/Institute_for_OneWorld_Health
4. www.who.int/neglected_diseases/en/ (accessed August 2009)

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www.iupac.org/web/ins/2009-033-1-700