

How Can Biotech Bridge the Global Health Innovation Gap: A Focus on Drug Discovery for Key Neglected Diseases

In recent years, the development pipeline for neglected diseases of the developing world has increased, in large part to the significant infusion of donor funding. Creating a new drug is an enormously risky proposition. Because most efforts fail long before the drug candidate can be tested in people, many high-quality drug discovery programs must be supported simultaneously.

Despite the real progress, too little funding is spent on moving promising research from universities to commercial settings and on supporting new discovery programs. This situation has resulted in an "innovation gap" that threatens the long-term success of the newly-revitalized neglected disease drug pipelines.

According to a panel of representatives from biotechnology companies and the public sector, the biotech industry has valuable assets and expertise that can be leveraged to help bridge this innovation gap. However, with little prospect of a financial return on their investment and concern about losing control over their intellectual property, companies lack incentives to do so. The panel discussed the benefits of industry involvement in neglected disease drug discovery and the barriers that make collaborations between industry and the public sector difficult.

Many biotechnology companies have proven expertise in developing small molecule drugs for diseases like cancer and cardiovascular disease. Research from BIO Ventures for Global Health (BVGH) has shown that several families of drug targets pursued by biotech companies for these indications have also been validated as drug targets in neglected disease pathogens. This finding implies that, in many

cases, the target expertise, compound libraries, and screening assays developed by biotechnology companies have direct relevance to drug discovery for neglected tropical diseases.

Representatives from Sequoia Pharmaceuticals and Anacor Pharmaceuticals both reported that they have had success in applying their platforms to neglected tropical diseases. However, finding funding to support such efforts has proven problematic, and promising compounds are often shelved. Panelists and audience members discussed the need for creative incentives with the potential for creating win-win situations for industry and the global health community.

The challenge of pursuing and funding R&D for neglected diseases extends to academic researchers too. One audience member from an Ivy League university argued that, even at a top research institution with abundant resources, scientists don't know how to identify opportunities, find receptive audiences, and form partnerships with industry for funding. As a result, many potentially promising drug targets are never fully validated.

Panelists agreed that greater collaboration between all involved groups is sorely needed. The knowledge, technology, funding and resources exist, but organizations need to know where to look and what questions to ask.

In addition to such partnerships, the World Health Organization's Solomon Nwaka pointed out that representatives from the developing world must be engaged and involved in the process so that they can eventually do this work themselves.

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