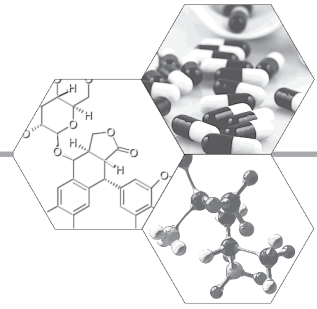


Drugs for neglected diseases: part II

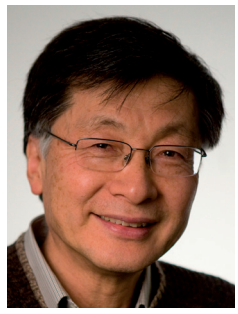
"…it appears that various contributing factors are converging and the increased efforts should lead to a stronger pipeline."

As mentioned in the foreword to the first issue in this two-part special focus, it is a challenge to obtain an overview of the field of neglected diseases from the perspective of medicinal chemistry [1]. Yet, however challenging the situation is, the R&D landscape for neglected diseases has been improving in recent years. According to the Global Funding of Innovation for Neglected Diseases database, total worldwide funding in 2009 for all neglected diseases (including HIV/AIDS) stood at US$3.2 billion, representing an increase of 8.2% compared with 2008, in spite of the economic downturn in that period [101]. The total amount appears substantial, but is quite meager when actually spread over 31 neglected diseases. Furthermore, 72% of those funds are taken up by the three largest diseases: HIV/AIDS, malaria and TB. The remaining funds are then spread over the other neglected diseases and include fields such as vaccines, diagnostics and platform technologies. Besides funding, the increased research effort is also reflected in the number of publications that cover a greater range of diseases, compared with 5 years ago (e.g., [102]). In addition to academic institutions, most major pharmaceutical companies have become involved in research efforts in the field of neglected diseases in various ways: donating antibiotics and de-worming agents; making their compound libraries available to outside organizations; donating patents to a patent pool; or by opening a screening facility. Therefore, it appears that various contributing factors are converging and the increased efforts should lead to a stronger pipeline.

In this issue

This issue starts with an interview with Solomon Nwaka of the WHO Special Programme for Research and Training in Tropical Diseases. He discusses his own experiences and outlines the program's effort in developing countries [2]. The editorial by Chris Edlin discusses the importance of patent sharing between pharmaceutical companies and academic institutions [3]. Mukherjee and Boshoff present a comprehensive review of nitroimidazole analogs (two of which series are currently in clinical trials) for TB and discuss their structure–activity relationships [4]. Burrows *et al.* discuss drug-discovery approaches aimed at various stages of malaria [5]. Such investigations are critical in overcoming the potential resistance of artemisinin-based therapies and to finding new agents that work in the liver stage of *Plasmodium vivax*. Guillemont *et al.* report the synthesis and structure–activity relationships of diarylquinolines, which represent a novel mode of action as anti-TB agents [6]. Nzila *et al.* reviews the repurposing effort of existing drugs for malaria and TB based on similarities in cell biology and genomic information [7]. Ioset and Chang present the Drugs for Neglected Diseases *initiative* business model and recently implemented lead-optimization process, as well as new strategies in phenotypic screening and compound sourcing [8]. Lastly, Kaneko *et al.* discuss the major challenges in TB drug discovery and the operations at TB Alliance [9].

We hope these articles provide an insightful overview of the contributions being made by medicinal chemistry to neglected disease R&D. Readers who are interested in further exploring developments in this field may find the efforts of the following organizations of interest (this list is not exhaustive): WHO and WHO Special Programme for Research and Training in Tropical Diseases; NIH National Institute of Allergy and Infectious Diseases and Therapeutics for Rare and Neglected Diseases; Center for Disease Control; European Center for Disease Prevention and Control; European Commission Research in Neglected Infectious Diseases; Bill and Melinda Gates Foundation; Wellcome Trust, Rockefeller Foundation; Medicines without Borders; Institute Pasteur; UK Medical Research Council; London School of Hygiene and Tropical Medicine; Liverpool School of Tropical Medicine; Swiss Tropical



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and Public Health Institute; Indian Council of Medical Research; Oswaldo Cruz Foundation; BioVenture; and the Global Fund to Fight AIDS, TB and Malaria.

We hope that the articles published over these two special issues provide valuable insights into the current status of medicinal chemistry efforts in the field of neglected diseases.

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