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► **COVER:** 'Combating viral infection' by Susanne Harris, inspired by the Antivirals Focus articles.



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In the 25 years since AIDS was recognized as a viral disease, antiviral drug discovery has advanced dramatically. Nevertheless, many challenges remain, such as viral resistance to existing drugs and the threat posed by emerging viruses. With the aim of highlighting key lessons learned from several decades of antiviral drug discovery, and discussing strategies for addressing these challenges, this month, together with *Nature Biotechnology*, we present a special focus on antivirals. The full focus can be found at <http://www.nature.com/focus/antivirals> and, thanks to the support of Pfizer and Gilead, will be freely available for 6 months. Opening the perspectives section, Flexner provides an outlook to the next 25 years of HIV drug development, discussing issues such as viral resistance and which drug classes and strategies could be favoured. HIV drug development so far provides an excellent illustration of strategies for antiviral drug discovery — in particular, parallels can be drawn to strategies being pursued for hepatitis C virus (HCV) — and De Clercq provides insights into the medicinal chemistry of the compounds that are currently being pursued for HIV and HCV. With a view to future treatment of HCV, Manns and colleagues consider the particular challenges and emerging drug targets for combating this virus, which causes chronic infection in at least 3% of the world's population. Highlighting the importance of antiviral drugs for tackling emerging viral health threats, von Itzstein provides a historical perspective on the discovery of sialidase inhibitors, which are now stockpiled in preparation for a possible influenza pandemic. And finally, to mark the fiftieth anniversary of the discovery of interferon, Borden and colleagues discuss the impact of interferons on biomedicine and the multitude of potential drug targets in the interferon system — not only for viral diseases, but also for cancer and multiple sclerosis.

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