Retrovirology

Poster presentation

Automated HTS/HCS for antivirals using visual HIV full replication assays

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There are currently 25 drugs belonging to 6 different inhibitor classes approved for the treatment of human immunodeficiency virus (HIV) infection. However, new anti-HIV agents and treatment strategies are still needed to confront the emergence of drug resistance and various adverse effects associated with long-term use of antiretroviral therapy and the inability to cure infected individuals. We developed visual, HIV full replication assays and implemented them in high-throughput compound (n = 200.000) and genome-wide siRNA screens, which allowed the identification of a few thousand novel small molecules with potent anti-retroviral activity and a few hundred host factors required for HIV infection, respectively. The identified compounds and host factors are opening unexplored avenues to novel antiviral drug and target discovery and validation, and should feed the drug development pipeline in the near future.