

A powerful new technology to identify HIV inhibitors

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Providing long-term HIV treatment for over 33 million infected individuals worldwide requires the continuous development of new HIV therapies. Virologists at the Helmholtz Zentrum Munchen have developed a cell-based assay system for easy, reliable identification of HIV inhibitors. This new technology can be used to screen large collections of well-characterized reagents as well as raw extracts of biological specimens. The assay system is described in detail in the current issue of *Antimicrobial Agents and Chemotherapy*.

EASY-HIT (Exploratory Assay SYstem for the discovery of HIV InhibiTors) is a new cell-based assay system for simple and reliable testing of HIV inhibitors. This system was developed under the leadership of Professor Ruth Brack-Werner at the Institute of Virology. At the heart of the system are cultured human cells that allow HIV to enter and replicate efficiently and that signal <u>HIV infection</u> by producing a red fluorescent protein. The EASY-HIT technology can be used to identify HIV-inhibitors, measure the potency of their inhibitory activity and to detect the stage of replication targeted by the inhibitor.

The researchers validated their technology with a panel of currently used anti-HIV drugs and then went on to identify 5 new HIV <u>inhibitors</u>. They also showed that this technology can be used to detect anti-HIV activities in raw plant extracts. The researchers are currently using this system to explore numerous biological specimens for anti-HIV activities and have already discovered novel unexpected sources of antiviral activities.



Stephan Kremb, first author of the manuscript, summarizes, "We expect the versatile and robust EASY-HIT system to identify new targets against HIV and new sources of HIV-inhibitors". "Our technology has many applications in HIV research and <u>pharmaceutical drug</u> design", adds Ruth Brack-Werner.

HIV was first discovered in the early 1980s and described as the causative agent of AIDS. As there is no cure for HIV infection as yet, HIV-infected individuals require life-long treatment with antiviral drugs. The problems with currently available therapies include drug side-effects, the emergence of resistant viruses and the cost of long-term treatment. "It is our particularly hope that the EASY-HIT technology will promote the development of new strategies for HIV treatment in areas with limited resources", states Ruth Brack-Werner.

More information: Kremb S, Helfer M, Heller W, Hoffmann D, Wolff H, Kleinschmidt A, Cepok S, Hemmer B, Durner J, Brack-Werner R. EASY-HIT: HIV Full-Replication Technology for Broad Discovery of Multiple Classes of HIV Inhibitors. Antimicrob Agents Chemother. 2010 Dec;54(12):5257-68

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