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Trana Discovery and Southern Research Institute Find Bioactive HIV Antiviral Compounds

NIAID contracts additional \$700,000 to screen 300,000 more compounds for HIV inhibition

CARY, NC and BIRMINGHAM, Ala. (October 28, 2009) – [Trana Discovery, Inc.](http://www.tranadiscovery.com), an infectious disease drug discovery technology company, and [Southern Research Institute](http://www.southernresearch.org), a not-for-profit contract research organization conducting basic and applied preclinical drug research, today announced that several bioactive hits from a set of 15,000 diverse small molecule compounds screened under contract with the National Institute of Allergy and Infectious Diseases (NIAID) exhibit antiviral activity against HIV-1 infected cells. Among the compounds tested at Southern Research using the Trana HIV 201 High-Throughput Screening (HTS) assay, 16 compounds demonstrated inhibition of HIV replication in infected human cells and several of these compounds were judged to be “potentially druggable.”

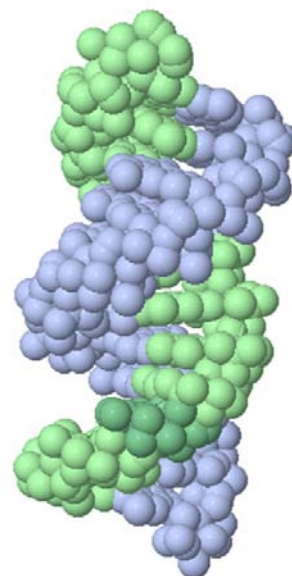
The screening assay used to identify the compounds is based on the premise that HIV-1 has evolved to use tRNA^{Lys3} as a primer for initiation of reverse transcription. Therefore, the interaction between tRNA^{Lys3} and viral genomic RNA represents a potential novel target for HIV-1 drug development. The biochemical assay to identify inhibitors of the interaction between tRNA^{Lys3} and HIV-1 genomic RNA was developed by Trana and transferred to Southern Research for high-throughput screening. Southern Research converted the assay to a homogeneous amplified luminescent proximity assay using AlphaScreen[®] reagents from [PerkinElmer](http://www.perkinelmer.com).

During this initial pilot study, 164 compounds were identified from the diversity set library as hits. Of these hits, 136 were retested in dose-response against HIV-1_{III_B} replication in a CEM-SS cytoprotection assay. Sixteen of this last group of compounds inhibited HIV-1 replication.

"These data indicate that the TRANA Discovery assay has identified a number of compounds with modest antiviral activity against HIV-1," said Roger Ptak, Co-Principal Investigator, Southern Research Institute, in his report to the [Division of Acquired Immunodeficiency Syndrome \(DAIDS\)](http://www.niaid.nih.gov) within NIAID. "Additional testing of compounds with similar structures, as well as broader HTS, should lead to the identification of lead compounds that inhibit HIV-1 replication through the novel mechanism of inhibiting the interaction between tRNA^{Lys3} and viral genomic RNA."

As a result of this successful pilot study, DAIDS has approved \$700,000 of additional funding for the contract with Southern Research Institute in order to screen an additional 300,000 compounds and to conduct confirmatory testing of selected lead compounds. Lead candidates (or analogs) identified through this screening will be pursued by Trana Discovery for development and to secure the property rights and patents as deemed appropriate.

Toward that end, Trana Discovery is seeking organizations interested in licensing identified leads or that hold diverse collections of compounds or compounds with known bioactivity against HIV but unknown mechanism of action to identify candidates for drug development.



tRNA-HIV RT complex*

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The use of high-throughput screening (HTS) assays developed by Trana Discovery can provide licensing opportunities for exclusive rights to new drug classes and reduce the cost and time for drug discovery.

"We are excited about the results from the initial screening efforts and for the confidence exhibited by the NIAID/DAIDS by this additional funding commitment," said Steve Peterson, CEO of Trana Discovery. "We remain very optimistic that the use of our HIV assay will lead to new antivirals for the treatment of this disease."

NIAID conducts and supports research to study the causes of infectious and immune-mediated diseases, and to develop better means of preventing, diagnosing and treating these illnesses. The NIAID is a component of the [National Institutes of Health](#) (NIH), the primary federal agency for conducting and supporting basic, clinical and translational medical research. Work for this project was performed under the DAIDS, NIAID contract N01-AI-70042; Roger Miller, Project Officer.

The HTS screening was conducted at the Southern Research High-Throughput Screening Center which consists of a suite of laboratories designed for efficient screening of large compound libraries and has the capacity for screening a wide variety of assay types. The Trana Discovery assay was recently validated in a 1536 well format, which increases the screening capabilities to over 100,000 compounds per day.

Organizations interested in licensing the Trana HIV 201 assay should contact Trana at info@tranadiscovery.com or by calling 866-390-3452 (toll free) or +1-919-342-6192. Parties interested in screening compounds using this assay at Southern Research Institute facilities may contact David Harris at d.harris@southernresearch.org or call +1-800-967-6774.

About Trana Discovery, Inc.

Trana Discovery, an anti-infective drug discovery technology company, helps its partners find new classes of drugs for the treatment of serious bacterial, viral, and fungal infectious diseases. Our proprietary assays identify compounds that work through a unique mechanism of action: inhibition of the target pathogen's ability to use transfer RNA (tRNA) essential for propagation. The use of high-throughput screening assays developed by Trana Discovery will reduce the cost and time for drug discovery. Our assays provide licensing opportunities for exclusive rights to new drug classes. Trana Discovery has licensed the patented technology emanating from 20 years of research conducted at North Carolina State University, and holds patents that expand on this core technology and its use in high throughput screening. The company is located in Cary, North Carolina. For more information, please visit www.tranadiscovery.com.

About Southern Research Institute

Southern Research Institute is a nonprofit 501(c)3 scientific research organization that conducts preclinical drug discovery and development, and advanced engineering research in materials, systems development, environment and energy. Our more than 550 scientific and engineering team members support clients and partners in the pharmaceutical, biotechnology, defense, aerospace, environmental and energy industries. Southern Research is headquartered in Birmingham, Ala., with facilities in Wilsonville, Ala., Anniston, Ala., Frederick, Md., and Durham, NC and offices in New Orleans, La., Washington, DC and Kiev, Ukraine. For more information about Southern Research and its capabilities and accomplishments, visit www.SouthernResearch.org.

*Bilbille Y, et al. *Vendeix Nucleic Acids Res.* 2009 Jun;37(10):3342-53. Epub 2009 Mar 26. See www.tranadiscovery.com for complete reference.

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