

Case study: drug development

SRI is seeking new treatments
for tuberculosis, a global health crisis.

We are a community of innovation.

research. partner. solve.



Tuberculosis, commonly known as TB, claims nearly two million lives each year.

According to the World Health Organization, two billion people—one-third of the world’s population—are infected with the TB mycobacterium. The disease may not manifest into active TB until months or even years later, and some infected individuals will not develop active TB at all. Only individuals with active TB can infect others. Treatment, which often requires multiple drugs, can last up to nine months and may cause severe side effects. Noncompliance with treatment has led to drug resistance.



X-ray of an infected lung.

Drug-resistant strains, found in every country in the world where the disease is prevalent, pose a grave threat to global health because treatment options are severely limited. Many major pharmaceutical companies are not actively developing new treatments because TB primarily affects populations with limited resources to pay for new medicines. As the frequency of worldwide travel increases, we are all at risk from the lack of effective therapies.

SRI International researchers are attacking this huge health issue. In partnership with the National Institutes of Health (NIH), SRI’s Biosciences Division has launched a large-scale initiative to screen, evaluate, and develop new drugs and treatments for TB. The program builds on SRI’s nearly two decades of preclinical drug development work with the National Institute of Allergy and Infectious Diseases (NIAID).

SRI has developed the infrastructure, protocols, and expertise needed to test tens of thousands of compounds

a year against a wide variety of TB strains. Our dedicated, state-of-the-art biosafety facilities are well suited to working with drug-resistant TB.

SRI is screening drug candidates created by universities, research institutes, companies, and SRI’s own researchers against a strain of TB with no drug resistance, then against increasingly drug-resistant strains, to identify candidate drugs with a high probability of efficacy against multiple drug-resistant (MDR) or extensively drug-resistant (XDR) TB strains. Drugs that meet key specifications are then moved into a development path toward human clinical trials.

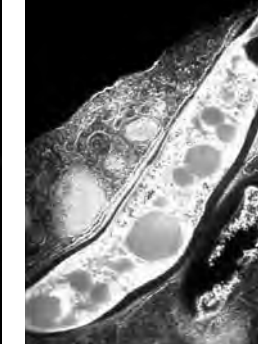
In collaboration with NIAID and other clients and partners, SRI takes drugs through early discovery screening, into initial preclinical studies, and eventually through Investigational New Drug (IND) submission-directed safety studies and manufacturing of drug products for human clinical trials. SRI’s ability to cover the entire process, combined with our impressive track record of

helping to advance more than 100 drugs into clinical trials, offers our clients and collaborators a unique, highly qualified resource.

A treatment that can wipe out TB in less time and with fewer side effects could interrupt transmission of the disease and have a tremendous impact on this deadly disease. SRI is helping to create the next generation of TB drugs to address one of the world’s most important health challenges.

“The discovery of just one drug that could cure active TB in less than two to three months would be a major breakthrough—it would significantly increase treatment compliance, thereby reducing the transmission of the disease and the emergence of drug-resistant strains.”

—Kristien Mortelmans, Ph.D., Director of SRI’s microbiology and TB screening programs



SRI researchers are testing tens of thousands of compounds a year against a wide variety of TB strains.

About SRI’s Biosciences Division

SRI’s Biosciences Division is a unique organization of more than 200 people with the expertise and resources necessary to take research programs from “idea to IND”™—from basic research, to drug discovery, to the Investigational New Drug applications (INDs) needed to begin clinical trials.

The broad range of projects we work on with government and industry partners draws on our expertise in medicinal and organic chemistry, microbiology, virology, pharmacology, pharmacokinetics, drug metabolism, toxicology, analytical chemistry, formulation design, drug product manufacturing, and regulatory affairs.

Our long-term partnership with NIAID includes work on biodefense and AIDS. SRI also conducts R&D sponsored by other NIH institutes, other government agencies, nonprofit organizations, and biotechnology and pharmaceutical companies.

SRI currently has several of its own drugs on the market (anticancer, antimalarial, and antiviral), several more in clinical trials, and additional candidates in preclinical development. Moreover, we have assisted clients and partners in the development of well over 100 products that have entered clinical trials or reached the market.



SRI International offers research, discovery, and development programs in oncology, infectious disease, neuroscience, immunology, and inflammation. Here is a look at some of the work we are doing.

Biodefense Safety

Working with the U.S. Defense Threat Reduction Agency, SRI is identifying FDA-approved drugs that could be effective against biological threats.

Understanding Sleep

A research team at SRI recently identified novel sleep-activated neurons in the cerebral cortex. These findings may have important implications for the treatment of sleep disorders and for understanding aspects of our behavior that depend heavily on sleep, such as our daytime performance, memory, and mood.

Center for Advanced Drug Research (CADRE)

SRI has established a new center for drug research at SRI Shenandoah Valley in Harrisonburg, Virginia. Building on SRI's pharmaceutical capabilities in Menlo Park, California, the Center focuses on understanding host-pathogen interactions and disease transmission to improve the productivity of the pharmaceutical industry, to help the U.S. respond to biothreats, and to develop life-saving treatments for neglected and orphan diseases.

About SRI International

Silicon Valley-based SRI International is one of the world's leading independent research and technology development organizations. SRI, which was founded by Stanford University as Stanford Research Institute in 1946 and became independent in 1970, has been meeting the strategic needs of clients and partners for more than 60 years.

Perhaps best known for its invention of the computer mouse and interactive computing, SRI has also been responsible for major advances in networking and communications, robotics, drug discovery and development, advanced materials, atmospheric research, education research, economic development, national security, and more. The nonprofit institute performs client-sponsored research and development for government agencies, businesses, and foundations. SRI also licenses its technologies, forms strategic alliances, and creates spin-off companies.



Menlo Park Headquarters

SRI International
333 Ravenswood Avenue
Menlo Park, CA 94025-3493
650.859.2000

Washington, D.C.

SRI International
1100 Wilson Blvd., Suite 2800
Arlington, VA 22209-3915
703.524.2053

SRI Shenandoah Valley

Center for Advanced Drug Research
c/o James Madison University
Burruss Hall MSC 7804
800 South Main Street
Harrisonburg, VA 22807
540.568.5757

Additional U.S. Locations

Ann Arbor, Michigan
Harrisonburg, Virginia
Helena, Montana
Lexington Park, Maryland
Orlando, Florida
San Antonio, Texas
San Luis Obispo, California
Shrewsbury, New Jersey
St. Petersburg, Florida
State College, Pennsylvania

International Locations

Sharjah, United Arab Emirates
Sondrestrom, Greenland
Tokyo, Japan

**Discover more about SRI, our
people, and our innovations at
www.sri.com**

Printed on FSC-certified paper with soy inks.

SRI International is a registered trademark of, and idea to IND is a trademark of SRI International. All other trademarks are the property of their respective owners.

Copyright 2008 SRI International. All rights reserved. 12/08