



## **New Research Indicates Potential for Continued Spread of Multidrug Resistant Strain of Staph Aureus**

### **Data Published in Antimicrobial Agents and Chemotherapy Sheds New Light on Little Known Multidrug Resistance Gene**

SAN DIEGO, July 19, 2011 (GLOBE NEWSWIRE) -- Trius Therapeutics, Inc. (Nasdaq:TSRX), a biopharmaceutical company focused on the discovery, development and commercialization of innovative antibiotics for life-threatening infections, today announced new research that provides an explanation for the recent spread and the future threat of a little known multidrug resistant strain of Staphylococcus aureus. Researchers found that bacteria that acquire a multidrug resistance gene called the cfr gene are able to grow and spread at a similar rate compared to Staphylococcus aureus that do not carry the multidrug resistance gene. Usually, bacteria that acquire drug resistance do so at what scientists call a "fitness cost" in which the bacteria grow more slowly than bacteria without the resistance trait, providing somewhat of a natural check from keeping the resistant bacteria from spreading out of control. This latest research indicates that Staphylococcus aureus bacteria carrying the cfr multidrug resistance gene pose a potential threat as an emerging superbug.

"Linezolid and clindamycin are two widely used antibiotics to treat severe staph infections, including methicillin resistant strains known as MRSA. However, cfr-positive Staphylococcus aureus strains are resistant to linezolid and clindamycin as well as many other ribosomal antibiotics," said Dr. Alexander Mankin, Professor, Center for Pharmaceutical Biotechnology at the University of Illinois Chicago and senior author on the study. "The increased use of these antibiotics is likely to select for this strain. Even more alarming, these recent findings on the negligible fitness cost of carrying the cfr gene suggest that staph bacteria can easily maintain and spread this resistance even without selection from use of antibiotics."

The first cfr positive clinical strain of methicillin-resistant Staphylococcus aureus was described in 2007 by Dr. Mankin and his colleagues, demonstrating how the cfr gene renders cells resistant to many clinically relevant antibiotics that target the large ribosomal subunit. Since 2007, a number of reports of new cfr-positive clinical isolates have appeared in several pathogenic species. Although it is difficult to conclude whether this trend indicates the recent spread of the cfr gene or simply the fact that its presence has been overlooked previously, the ongoing rapid dissemination of cfr among pathogenic strains remains a real possibility. A multi-city outbreak of cfr-positive linezolid resistant strains was reported in Ohio in 2010, in addition to recent outbreaks of cfr strains in Spain and Italy. The cfr gene has also been seen in isolates from Mexico, Colombia, Belgium and Ireland, suggesting the beginning of a global phenomenon.

"In the near future we may see a rapid increase in the frequency of MRSA and other staphylococci carrying this gene," said Karen Shaw, Ph.D., Senior Vice President of Biology at Trius Therapeutics and author on the study. "Activity against bacteria with the cfr multidrug resistance gene will be a key characteristic of next generation antibiotics."

In December 2010, research was published elucidating the mechanism by which an investigational second generation oxazolidinone called torezolid phosphate retains full activity against clinical isolates of Staphylococcus aureus carrying the cfr gene. The potent activity of torezolid against cfr-positive bacteria differentiates it from linezolid, marketed by Pfizer as Zyvox®, which is ineffective against cfr-positive strains.

Torezolid phosphate is an IV and orally administered second generation oxazolidinone currently being developed by Trius Therapeutics in Phase 3 clinical trials for the treatment of serious gram-positive infections, including those caused by methicillin-resistant Staphylococcus aureus, or MRSA.

The most recent research on the "Low Fitness Cost Associated with Multidrug Resistance Gene cfr" by LaMarre, et al, was published in the August 2011 issue of Antimicrobial Agents and Chemotherapy. The manuscript is available to subscribers ahead of print at: <http://aac.asm.org/cgi/content/abstract/55/8/3714>

The study was supported by a grant from the National Institute of Allergy and Infectious Disease, National Institutes of Health.

#### **About Trius Therapeutics**

Trius Therapeutics is a biopharmaceutical company focused on the discovery, development and commercialization of innovative antibiotics for life-threatening infections. The company's lead investigational drug, torezolid phosphate, is an IV and

orally administered second generation oxazolidinone in Phase 3 clinical development for the treatment of ABSSSI, the first such trial to be initiated under a Special Protocol Assessment (SPA). In addition to the company's torezolid phosphate clinical program, it is currently conducting three preclinical programs using its proprietary discovery platform to develop antibiotics to treat infections caused by gram-negative bacteria. For more information, visit [www.triusrx.com](http://www.triusrx.com).

## Forward-Looking Statements

Statements contained in this press release regarding matters that are not historical facts are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. Risks that contribute to the uncertain nature of the forward-looking statements include: Trius' ability to obtain additional financing; the success and timing of Trius' preclinical studies and clinical trials; regulatory developments in the United States and foreign countries; the performance of third-party manufacturers; changes in Trius' plans to develop and commercialize its product candidates; Trius' ability to obtain and maintain intellectual property protection for its product candidates; and the loss of key scientific or management personnel. These and other risks and uncertainties are described more fully in Trius' most recently filed SEC documents, including its Annual Report on Form 10-K and Quarterly Reports on Form 10-Q, including those factors discussed under the caption "Risk Factors" in such filings. All forward-looking statements contained in this press release speak only as of the date on which they were made. Trius undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

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