

## Chem-Bio News

**1. RING CLOSURE AS WARNING: NEW REAGENT FOR THE DETECTION OF ORGANOPHOSPHATE NEUROTOXINS WITH AN EXTREMELY FAST RESPONSE:** "Julius Rebek, Jr. and Trevor J. Dale at the Scripps Research Institute in La Jolla, California (USA) have now developed a new class of sensors that detect these neurotoxins up to five orders of magnitude faster than previous reagents."

**2. IAEA DENIES REPORT IT IS SURE IRAN SEEKING ATOM BOMB:** "The U.N. nuclear agency has no proof that Iran has or once had a covert atomic bomb program, it said on Thursday, dismissing a report that it had concluded Iran was on its way to producing nuclear weapons."

**3. WILL THE STARS ALIGN IN NEW YORK FOR TEST BAN ADVOCATES? A PREVIEW OF THE SIXTH CTBT ARTICLE XIV CONFERENCE:** "The current political momentum and an atmosphere of optimism surrounding the prospects for U.S. ratification and the Treaty's entry into force during leading up to this year's conference stand in stark contrast to the grim environment that encompassed the 2007s Article XIV Conference."

**4. STUDY ON RESPIRATORS VERSUS MASKS HAILED AS LANDMARK:** "The study, which involved close to 2,000 hospital staffers in Beijing, showed that N95 respirators reduced the risk of respiratory illness by a significant 60% and the risk of confirmed influenza by 75%, whereas surgical masks had no effect."

**5. THIS JUST IN! . . . NEVER MIND:** "Channel 4 News pulled an inadvertent War of the Worlds yesterday, reporting an accident at Utah's chemical warfare storage site that injured two workers. It was a pretty good story in a slow news week that unfortunately did not happen."

## CB Daily Report

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### **RING CLOSURE AS WARNING: NEW REAGENT FOR THE DETECTION OF ORGANOPHOSPHATE NEUROTOXINS WITH AN EXTREMELY FAST RESPONSE**

Phyorg.com

September 16, 2009

"Julius Rebek, Jr. and Trevor J. Dale at the Scripps Research Institute in La Jolla, California (USA) have now developed a new class of sensors that detect these neurotoxins up to five orders of magnitude faster than previous reagents. As the scientists report in the journal *Angewandte Chemie*, these substances not only selectively detect the neurotoxins, they simultaneously render them harmless.

Previous detection methods for organophosphates suffer from the fact that they are not sensitive enough, are too complex to use, and cannot be used in the field. In order to overcome these limitations, Rebek and Dale recently developed a new detection agent with a reaction time in the second range, which was still not fast enough. Step by step, they continued to develop their reagent. This has now led to a class of sensors consisting of an aromatic ring system and equipped with an oxime group (-C=N-OH). This type of group binds extremely fast to organophosphates (the researchers carried out their experiments with harmless neurotoxin analogues). Immediately neighboring the oxime group, the molecule has an alcohol group (-OH).

This ensures that the reaction product is immediately split off again, which is important because it is as toxic as the original neurotoxin. This process involves an intramolecular ring closure. The aromatic ring system promotes the tendency of the sensor to undergo this splitting reaction with ring closure. Furthermore, it provides the actual signal that makes the presence of the organophosphate visible: the ring system is a fluorescent dye, and the fluorescence becomes significantly more intense as soon as

the structure of the sensor molecule is changed by the ring closure reaction. This optical detection is four to five orders of magnitude faster than the original detection reagent."

The full article can be found at: <http://www.physorg.com/news172316206.html>

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## **IAEA DENIES REPORT IT IS SURE IRAN SEEKING ATOM BOMB**

By Mark Heinrich

Reuters

September 17, 2009

"The U.N. nuclear agency has no proof that Iran has or once had a covert atomic bomb program, it said on Thursday, dismissing a report that it had concluded Iran was on its way to producing nuclear weapons. The International Atomic Energy Agency reaffirmed IAEA chief Mohamed ElBaradei's September 9 comment that allegations the agency was sitting on evidence of Iranian bomb work were "politically motivated and baseless."

"With respect to a recent media report, the IAEA reiterates that it has no concrete proof that there is or has been a nuclear weapons program in Iran," an IAEA statement said.

The IAEA received information from a variety of sources that might be relevant to verifying that a state was not hiding nuclear bomb research or development, it said.

All information on Iran that the IAEA had vetted has already been shared with its 35-nation Board of Governors in reports by ElBaradei.

Diplomats close to the IAEA have told Reuters it has no "smoking gun" evidence of Iran currently trying to apply nuclear technology to its ballistic missile program. Two diplomats repeated that position after Thursday's media report.

The IAEA is investigating what it calls credible Western intelligence material suggesting Iran in the past researched ways of revamping the cone of a Shabab 3 missile to fit a nuclear warhead.

The inquiry also touches on alleged Iranian plans for test-detonations of explosives at high altitude IAEA experts see as suitable for no other purpose but an atom bomb."

The full article can be found at: <http://www.reuters.com/article/worldNews/idUSTRE58G60W20090917>

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## **WILL THE STARS ALIGN IN NEW YORK FOR TEST BAN ADVOCATES? A PREVIEW OF THE SIXTH CTBT ARTICLE XIV CONFERENCE**

By Kaegan McGrath and Luis Gain

James Martin Center for Nonproliferation Studies

September 16, 2009

"Conclusion

The current political momentum and an atmosphere of optimism surrounding the prospects for U.S. ratification and the Treaty's entry into force during leading up to this year's conference stand in stark contrast to the grim environment that encompassed the 2007s Article XIV Conference. Although many states retained cautious optimism at the earlier conference, severe budgetary restrictions due to member states' failures to pay their assessed contributions, continued opposition to the CTBT from the Bush administration, and the perceived weakening of the international nonproliferation regime clouded visions for progress at the 2007 conference.[20]

While the political winds have shifted in the United States, a successful U.S. ratification campaign in the Senate will require serious, sustained efforts. Many agree that there currently exists a window of opportunity to make tangible progress on the international nonproliferation and disarmament agenda. Active participation from the United States at the conference and substantive discussions on means with which to achieve the Treaty's entry into force, as well as a successful conclusion of the special Security Council meeting chaired by President Obama, may lay the groundwork for a strengthened international nonproliferation regime. Nonetheless, failure to make headway on nonproliferation and disarmament measures in the United States, as well as in the international community, may slam shut the current window of opportunity, to the detriment of U.S. security and the peace and stability in the international community. The outcome of the up-coming Article XIV Conference in New York, as well as the impact of the Security Council meeting, will provide invaluable insight on whether the necessary political will exists to further the international nonproliferation and disarmament agenda."

The full article can be found at: [http://www.cns.miis.edu/stories/090916\\_ctbt\\_conference.htm](http://www.cns.miis.edu/stories/090916_ctbt_conference.htm)  
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## **STUDY ON RESPIRATORS VERSUS MASKS HAILED AS LANDMARK**

By Robert Roos

CIDRAP News (Center for Infectious Disease Research & Policy – University of Minnesota)

September 17, 2009

"A study in which N95 respirators strongly outperformed surgical masks in shielding hospital workers from influenza viruses and other microbes is being hailed as a landmark in research on respiratory protection for healthcare workers.

The study, which involved close to 2,000 hospital staffers in Beijing, showed that N95 respirators reduced the risk of respiratory illness by a significant 60% and the risk of confirmed influenza by 75%, whereas surgical masks had no effect.

The study was reported at an American Society for Microbiology meeting in San Francisco this week but has not yet been published in full form. It is described as the first randomized controlled trial comparing the effectiveness of N95 respirators and surgical masks.

N95 respirators are designed to fit closely to the face and filter out 95% of airborne particles, whereas surgical masks are looser fitting and were originally designed to prevent the wearer from infecting others.

But health workers say the tight-fitting N95s are uncomfortable and difficult to wear for long periods, and hospitals sometimes have trouble keeping them in supply. Surgical masks are more comfortable and cheaper, but scientists have not found much evidence that they protect wearers from respiratory pathogens.

In the face of the H1N1 flu pandemic, respiratory protection for health workers has been a big issue. Two weeks ago, the National Academy of Sciences' Institute of Medicine (IOM) issued a report affirming the current Centers for Disease Control and Prevention (CDC) guidance on the topic. The CDC recommends use of N95s by all healthcare workers who enter the rooms of patients with confirmed or suspected H1N1 infection. The same advice goes for emergency medical personnel who come in close contact with such patients.

But the CDC is expected to issue some new guidance on the issue soon. CDC spokesman Tom Skinner said today that the new recommendations will be issued "by next week at the latest."

The full article can be found at:

<http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/sep1709respir-jw.html>

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## **THIS JUST IN! . . . NEVER MIND**

By Glen Warcol  
Salt Lake Tribune  
September 18, 2009

“Channel 4 News pulled an inadvertent War of the Worlds yesterday, reporting an accident at Utah's chemical warfare storage site that injured two workers. It was a pretty good story in a slow news week that unfortunately did not happen.

Deseret Chemical Depot in Tooele County was holding a drill that included sending a press release out to area news media. The press release was marked "TEST EXERCISE MESSAGE," but apparently not clearly enough, ABC 4 explained:

The report was sent as a test message and was mistaken by ABC 4 staff as a real incident.

In other words, all you 4 News fans in Tooele can cut through the plastic sheeting and crawl out of the basement.”

The full article can be found at: <http://blogs.sltrib.com/slcrawler/index.php>

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