

Chemical and Biological News

DISARMAMENT

Libya Completes Destruction of Its Bulk Sulfur Mustard Stockpile

May 06, 2013

Libya has completed the destruction of sulfur mustard agent that was stored in bulk in transportation containers at the depot in Ruwagha, bringing the total amount of Category 1 chemical weapons destroyed by Libya to 22.3 metric tonnes (MT), or nearly 85% of the total declared stocks. Destruction of the remaining 8.82 MT of sulfur mustard that was stored in bulk at Ruwagha resumed on 20 April 2013 and by 4 May the facility completed the destruction under OPCW verification.

Libya also completed the destruction of its remaining Category 3 weapons, in accordance with the timeline it had set in its detailed plan for the destruction of the remaining chemical weapons. What remains now to be destroyed are about 2.45 MT of polymerised sulphur mustard and 1.6 MT of sulphur mustard loaded in projectiles, bombs and bomb cartridges, as well as 846 MT of precursor chemicals (Category 2). The destruction operations were conducted under continuous on-site monitoring by a team of OPCW inspectors

The OPCW Director-General, Ambassador Ahmet Üzümcü, announced the achievement of this destruction milestone in Libya, today in his opening address to the 72nd Session of the OPCW Executive Council: "I would like to congratulate Libya on this accomplishment. I should also like to thank Canada, Germany, and the United States of America for the assistance they provided, which facilitated the redeployment of the inspection team and resumption of destruction operations," he said.

Libya first began to destroy the bulk sulfur mustard in October 2010 but suspended the operation in early February 2011 when the neutralization unit malfunctioned. Due to the prevailing situation, Libya was unable to resume operations for more than two years. They remained committed to destroy the stockpile as soon as circumstances allowed. The government meanwhile took a number of precautionary measures to secure its remaining chemical weapons while the destruction facility at Ruwagha was repaired and maintained for use.

<http://www.opcw.org/news/article/libya-completes-destruction-of-its-bulk-sulfur-mustard-stockpile/>

Turkey sends team to screen for chemical weapons on Syria border

May 09, 2013

ISTANBUL (Reuters) - Turkey has sent a team of eight experts to the border with Syria to test wounded victims of the country's civil war for traces of chemical and biological weapons, the state-run Anatolian news agency said on Thursday.

Turkey started testing blood samples last week from Syrian casualties brought over the border for treatment to determine whether they were victims of a chemical weapons attack.

The civil defense team, equipped with a specialist vehicle which can detect evidence of chemical, biological and nuclear substances, has been stationed at the Cilvegozu border gate near the town of Reyhanli, Anatolian said.

Syrian President Bashar al-Assad's forces and opposing rebels have accused each other of using chemical weapons.

Britain said on Thursday it believed it was “very likely” that the Syrian government had used chemical weapons, but that it had “no evidence to date” that the rebels had used them.

Washington has long said it views the use of chemical weapons in Syria as a “red line”. But, wary of the false intelligence that was used to justify the 2003 war in Iraq, the United States says it wants proof before taking any action.

Turkey’s Star newspaper, which is close to the government, reported on Thursday that the forensic institute that has been testing the blood samples had found traces of ricin, a highly toxic substance which can be used as a chemical warfare agent.

Turkish officials have declined to confirm whether the tests have been completed or to comment on any results.

(Writing by Ece Toksabai; Editing by Nick Tattersall/Mark Heinrich)

<http://news.yahoo.com/turkey-sends-team-screen-chemical-weapons-syria-border-130441650.html>

Deputy Director-General visits Croatia during the 12th Regional Meeting of National Authorities in Eastern Europe

May 16, 2013

The OPCW Deputy Director-General, Ambassador Grace Asirwatham, paid a visit to the Republic of Croatia on 13 and 14 May 2013 and inaugurated, together with Dr Mrs. Vesna Batistiæ Kos, Assistant Minister in the Directorate-General for Multilateral Affairs and Global Issues of the Ministry of Foreign and European Affairs, the 12th Regional Meeting of National Authorities in Eastern Europe. The meeting was held in Zagreb.

In her opening statement, the Deputy Director-General stressed the importance of regional meetings as a forum for National Authorities to review and discuss issues relating to the practical implementation of the Chemical Weapons Convention (CWC), to share experiences and best practices, and to foster cooperation among States of the region. Mrs. Asirwatham commended the National Authorities of States in Eastern Europe for their efforts to strengthen the effective national implementation in the region and urged them to actively participate in the deliberations, in particular regarding new initiatives and approaches, technical tools and procedures, and practical information related to national implementation.

During the bilateral meeting with the Assistant Minister, the Deputy Director General briefed her on the outcomes of the recently concluded Third Review Conference. Mrs. Asirwatham also provided an overview of the current status of the implementation of the CWC and the ongoing work of the OPCW to achieve the objectives of the Convention. The discussion also covered activities conducted in the framework of the organisation’s programmes on International Cooperation and Assistance (ICA) in Croatia, and reiterated the importance of promoting cooperation among States of the region.

<http://www.opcw.org/news/article/deputy-director-general-visits-croatia-during-the-12th-regional-meeting-of-national-authorities-in/>

Assistance and Protection Course on Chemical Safety Management for African State Parties Held in India

April 18, 2013

The Assistance and Protection Training Course on Chemical Safety Management for African State Parties was held at The

Landmark Hotel and the Defence Research and Development Establishment (DRDE) in Gwalior from 1 to 5 April 2013. The course was co-organised by the OPCW and the Government of India.

The course is offered by the Indian Government under Article X of the Chemical Weapons Convention to help build capacity in assistance and protection against chemical weapons. The course was attended by 13 participants from 11 African State Parties* and 23 participants from India.

* Algeria, Ghana, Kenya, Lesotho (2), Liberia, Namibia, Nigeria, South Africa, Uganda, Zambia (2) and Zimbabwe.

<http://www.opcw.org/news/article/assistance-and-protection-course-on-chemical-safety-management-for-african-state-parties-held-in-ind/>

Workshops Organised in Luanda to Support Angola's Accession to the Chemical Weapons Convention

April 26, 2013

The OPCW co-organized two workshops in Luanda on 22 and 23 April 2013 that were designed to support Angola's accession to the Chemical Weapons Convention (CWC) and the Biological and Toxin Weapons Convention (BWC).

The Foreign Affairs Minister of Angola, H.E. Mr Georges Chikoti, opened the workshops by confirming his Government's intention to accede to both conventions, noting the importance that the Government of Angola attaches to international disarmament treaties.*

The two workshops shared similar agendas which covered the main articles of each Convention, CWC and BWC National Authorities, national implementation,

declarations and submission of confidence-building measures, international co-operation and assistance, and the accession processes.

The CWC workshop was a day of national awareness in national CWC implementation with more than 30 participants, including senior representatives from the ministries of Foreign Affairs, Industry, Interior, Defense, Justice, Transport, Commerce, Finance (Customs), Police, and the Humanitarian Demining and Humanitarian Assistance Commission(CNIDAH).

The OPCW Director of International Cooperation and Assistance, Mr. Mark Albion, expressed the OPCW's support to Foreign Minister Chikoti in helping Angola to fulfil its obligations under the CWC as soon as its instrument of ratification is signed.

<http://www.opcw.org/news/article/workshops-organised-in-luanda-to-support-angolas-accession-to-the-chemical-weapons-convention/>

NATIONAL AND INTERNATIONAL DEVELOPMENTS

Third Review Conference Concludes with Consensus Final Document and Political Declaration

April 19, 2013

The Third Review Conference of the Chemical Weapons Convention (CWC) successfully concluded today with the adoption by consensus of a two-part final document: A political declaration that confirms the "unequivocal commitment" of the States Parties to the global chemical weapons ban, and a comprehensive review of CWC implementation since the last Review Conference in 2008 that also maps out the OPCW's priorities for the coming five years. The final document will be made

available soon on the OPCW web site at <http://www.opcw.org/>

“I congratulate and thank the States Parties for their strong support for our continuing efforts to achieve a world that is free of chemical weapons,” said the OPCW Director-General, Ambassador Ahmet Üzümcü. “They have underlined their commitment that the OPCW remains a global repository of knowledge and expertise on implementing the Convention, and their determination to maintain the CWC as a bulwark against chemical weapons.”

The UN Secretary-General, Ban Ki-moon, delivered a speech to the opening session of the conference. The Foreign Minister of the Netherlands, Frans Timmermans, the Minister of Foreign Affairs and Vice-Prime Minister of Luxembourg, Jean Asselborn, and the Turkish Foreign Minister, Ahmet Davutoğlu, also addressed the conference.

A number of other senior officials attended the opening days of the conference. They included Angela Kane, the UN High Representative for Disarmament Affairs, and high level officials from Canada, Germany, Iran, Iraq, Saudi Arabia, the United Kingdom, the United States and Yemen, among others. Video interviews with some of these senior officials can be viewed [here](#).

The political declaration reiterates the “deep concern” of States Parties that chemical weapons may have been used in the Syrian Arab Republic, underlining that “the use of chemical weapons by anyone under any circumstances would be reprehensible and completely contrary to the legal norms and standards of the international community.” The statement expresses support for close cooperation between the OPCW Director-General and Secretary-General of the United Nations.

Other highlights of the Review Conference political declaration:

- *Conviction* that, 16 years after its entry into force, the Convention has reinforced its role as the international norm against chemical weapons;
- *Unqualified commitment* to achieve the universality of the CWC, urgently calling upon the remaining States not Party to join the Convention without delay and precondition;
- *Determination* that the destruction of all existing chemical weapons be completed in the shortest time possible;
- *Commitment* to adopt the necessary measures to fully implement the Convention as a matter of priority, noting that 100 States Parties still need to adopt such measures;
- *Commitment* to foster international cooperation in the peaceful uses of chemistry, and to implement the CWC in a manner that avoids hampering economic and technological development;
- *Intention* to continue providing the OPCW the support it needs to fully implement the CWC and to deal more effectively with future opportunities and challenges; and
- *Desire* to improve interaction with chemical industry, the scientific community, academia and civil society organisations in promoting the goals of the CWC.

The Third Review Conference was well attended with delegates from 122 of the 188 States Parties, 8 international organizations and 3 States not Party, and was chaired by Ambassador Krzysztof Paturski of Poland.

In addition, there was an unprecedented level of attendance by civil society, with representatives of 47 NGOs who organised and participated in more than 10 side events exploring a variety of issues relevant to the conference. For the first time, NGO representatives were also permitted to address conference delegates in an informal plenary session.

<http://www.opcw.org/news/article/third-review-conference-concludes-with-consensus-final-document-and-political-declaration/>

Obama: There is ‘some evidence’ Syria’s Assad used chemical weapons

By John Newland, Staff Writer, NBC News

President Barack Obama said Tuesday that the United States has evidence that chemical weapons were used in Syria’s brutal civil war but that it remains unclear who used them.

In a White House press conference, Obama said there is “some evidence” that the regime of Syrian President Bashar Assad used the weapons, but urged against rushing to judgment, saying more facts must be known before any action taken.

NBC News’s Paul Goldman and Charlene Gubash contributed to this report.

For full report please check:

http://worldnews.nbcnews.com/_news/2013/04/30/17985682-obama-there-is-some-evidence-syrias-assad-used-chemical-weapons?lite

Israel says Syria used chemical weapons; Russia warns of ‘Iraqi scenario’

Greg Botelho and Elise Labott, CNN

April 24, 2013

(CNN) — Are Syrian forces using chemical weapons in their years-long fight to hold on to power?

That’s what the head of the Israel Defense Forces intelligence research and analysis division said Tuesday, becoming the latest to allege that Damascus was employing weapons banned under international law against its own people.

The claim further stoked the debate about the international community’s role in Syria, where the United Nations estimated this month that 70,000 people have been killed since the conflict flared in March 2011. U.S. President Barack Obama, for one, has said the Syrian government’s use of chemical weapons against its own people would be a “game changer” in how his and other nations address the crisis.

On Tuesday, his nation’s top diplomat said Tuesday that the United States does not know definitively that such chemical weapons had been deployed. In fact, U.S. Secretary of State John Kerry said, Israeli Prime Minister Benjamin Netanyahu also did not confirm the use of such weapons when the two spoke by phone earlier in the day.

CNN’s Elise Labott, Barbara Starr and Laura Smith-Spark contributed to this report.

For full report please check:

<http://edition.cnn.com/2013/04/23/world/meast/syria-civil-war>

Exclusive: U.S. to Bring Chemical Weapons Witnesses Out of Syria

*Josh Rogin
May 22, 2013*

With U.N. investigators unable to enter Syria, the State Department is working to bring evidence that the regime has used chemical weapons across the border into Turkey, reports Josh Rogin.

The State Department is working behind the scenes to identify medical professionals who

have evidence of chemical weapons use in Syria and is planning to help move them out of the country to meet with United Nations investigators in Turkey, officials tell *The Daily Beast*.

A Syrian man walks past destruction in the northern city of Aleppo on March 22, 2013. (Bulent Kilic/AFP/Getty)

The previously undisclosed effort was authorized by the White House, and is now being prepared by the State Department in conjunction with Syrian nongovernmental organizations they have been working with on the ground, two administration officials said. The U.N. team tasked with investigating alleged uses of chemical weapons inside Syria has not been able to enter the country because of a dispute over access with the regime of Bashar al-Assad, so the State Department is bringing the medical professionals and physiological samples taken from victims of the attacks to them.

Last month the White House acknowledged in a letter to Congress that the U.S. intelligence community had determined with various levels of confidence that chemical weapons—Sarin gas specifically—had been used in Syria on two occasions. But President Obama said following that disclosure that he couldn't confirm that his "red line" for Syria had been crossed because the chain of custody of the evidence could not be confirmed. While the administration said it was very likely that the regime was responsible, the Syrian government and the Russian government claim that in fact it was the rebels who have used Sarin as a weapon.

"We cannot have a situation in which chemical or biological weapons are falling into the hands of the wrong people," Obama told reporters in August. "We have been very clear to the Assad regime but also to other

players on the ground that a red line for us is, we start seeing a whole bunch of weapons moving around or being utilized." But his administration later seemed to roll back that standard, with an official telling *The New York Times* that the president's "red line" remark was "unscripted."

Now, as the Obama administration considers moving toward greater direct involvement in the Syrian conflict, there is a new push to confirm that chemical weapons were used in Syria by the regime.

"The administration is trying to bring international legitimacy to their claims," an administration official told *The Daily Beast*. "It provides additional pretext for greater political pressure on the regime."

For full report please check:

<http://www.thedailybeast.com/articles/2013/05/22/exclusive-u-s-to-bring-chemical-weapons-witnesses-out-of-syria.html>

Laaneots: North Korea's Real Threat is Chemical, Biological Weapons (3)

April 05, 2013

Despite all the attention being given to North Korea's nuclear capabilities, the dictatorship's chemical and biological weapons pose a far greater threat to the world, according to retired general Ants Laaneots.

North Korea has a single, 5-megawatt nuclear reactor that operated for 21 years before it was closed in 2007 due to international pressure, and its cooling system was destroyed in 2008, Estonia's former commander in chief told ETV.

Experts estimate that the country has produced 42-67 kilograms of plutonium,

which can be used to make 6-8 explosive nuclear devices, but American experts are confident that the country does not currently have the technology to compress the plutonium to install it in a warhead, Laaneots said.

“Much more dangerous are the large chemical resources that North Korea has.

For full report please check:

<http://news.err.ee/politics/4a68f27c-c5a5-4270-98fe-1ce8a384bd47>

Al Qaeda’s track record with chemical weapons

Peter Bergen, *CNN National Security Analyst*

May 7, 2013

Editor’s note: *Peter Bergen is CNN’s national security analyst, a director at the New America Foundation and the author of “Manhunt: The Ten-Year Search for bin Laden — From 9/11 to Abbottabad,” the basis for the HBO documentary “Manhunt” that will be shown on CNN on May 10.*

(CNN) — On Monday, a U.N. official said that Syrian rebels had likely used the nerve agent sarin.

Carla Del Ponte, the veteran war crimes prosecutor and a commissioner of the U.N. Independent International Commission of Inquiry for Syria, made this claim on a Swiss-Italian TV station.

Del Ponte explained, “Our investigators have been in neighboring countries interviewing victims, doctors and field hospitals and, according to their report of last week which I have seen, there are strong, concrete suspicions but not yet incontrovertible proof

of the use of sarin gas, from the way the victims were treated.”

Del Ponte added, “This was used on the part of the opposition, the rebels, not by the government authorities.”

The U.N. commission later pedaled back from Del Ponte’s statement, saying that it “has not reached conclusive findings as to the use of chemical weapons in Syria by any parties to the conflict.”

The context here, of course, is that President Barack Obama is under pressure to act in Syria because of his tough statement in August that the use of chemical or biological weapons in the Syrian conflict would cross a “red line.”

In the past few weeks, there have been multiple reports that Bashar al-Assad’s regime has deployed chemical weapons. (And after Del Ponte’s remarks were reported, a U.S. State Department official told CNN that the United States does not have information suggesting that rebels have “either the capability or the intent to deploy or use such weapons.” But, the source said, the “facts are not complete” and efforts to obtain more information are ongoing.)

But Del Ponte’s statement that the opposition is likely using chemical weapons raises an important issue: How plausible is the use of such weapons by any of the many armed factions that are fighting al-Assad’s regime?

The most effective Syrian opposition group is widely considered to be al-Nusra Front. The U.S. State Department says that al-Nusra Front is simply a cover name for al-Qaeda in Iraq, which has long operated in Iraq and neighboring Syria.

It is a worrisome fact that al Qaeda in Iraq is the only al Qaeda franchise ever to have actually used chemical weapons.

Al Qaeda in Iraq detonated a series of crude chlorine bombs in Iraq from late 2006 through mid-2007.

A study by the New America Foundation found a total of 16 chlorine gas bombings in Iraq, the last of which was in June 2007.

On October 21, 2006, al Qaeda in Iraq launched this campaign of chlorine bomb attacks by detonating a car loaded with mortars and chlorine tanks in Ramadi, wounding three Iraqi police officers and a civilian.

Such attacks sickened many hundreds of Iraqis, but the victims who died in these assaults did so from the blast of the bombs rather than from inhaling chlorine.

U.S. and Iraqi troops successfully killed or captured many of the people in al Qaeda in Iraq who were building the chlorine-laced bombs and captured much of the group's stockpiled chlorine.

Charles Faddis, who headed the CIA's operations against al Qaeda in Iraq's chlorine bomb network, told me in 2010: "There was a lot of effort to secure the chlorine, to get a hold of the tanks, to track these guys down (who were responsible for building the chlorine bombs), to kill them or capture them. Meanwhile, the attacks are not being particularly successful. The people are dying in the blast, but fortunately nobody is dying from chlorine."

There is no evidence that al Qaeda in Iraq stopped its campaign of chlorine bombing because of any qualms about the use of such weapons.

Chlorine gas was used by both sides during World War I but was banned by the Geneva Protocol, along with the use of other poison gases, after the end of the war.

The use of such weapons has been a matter of some debate within the leadership of al Qaeda.

In documents found by the U.S. Navy SEALs who raided Osama bin Laden's compound two years ago in Abbottabad, Pakistan, there was a letter written by bin Laden five days before he was killed in which he urged his followers in Yemen who were considering using "poison" to be "careful of doing it without enough study of all aspects, including political and media reaction."

As we consider the conflicting reports of the use of chemical weapons that have emerged from Syria over the past weeks, it is worth recalling that the al Qaeda affiliate in Syria has in the past used crude chemical weapons on multiple occasions in neighboring Iraq.

Also al Qaeda's leaders such as bin Laden have pushed back on the use of such weapons only insofar as their use might damage the image of al Qaeda in the eyes of the Muslim public, not because of international norms that the use of these weapons is beyond the pale.

<http://edition.cnn.com/2013/05/06/opinion/bergen-chemical-weapons-syria/>

Mississippi man linked to ricin letters charged with biological weapons use

*Robbie Ward TUPELO, Mississippi
April 27, 2013*

(Reuters) - A Mississippi martial arts instructor was charged on Saturday with attempting to use a biological weapon after a ricin-laced letter was sent to

President Barack Obama earlier this month, the U.S. Department of Justice said.

Everett Dutschke, 41, was arrested at his Tupelo home shortly after midnight by FBI agents following searches of the residence and a former business as part of the ricin letter investigation.

He was later charged with “developing ... and possessing” ricin and “attempting” to use it “as a weapon,” according to a joint statement by the U.S. attorney for the northern district of Mississippi and the head of the FBI’s Mississippi office.

Ricin is a highly lethal poison made from castor beans.

If convicted, Dutschke faces maximum possible penalties of life imprisonment and a \$250,000 fine.

His arrest came several days after U.S. prosecutors dropped charges in the case on Tuesday against another Mississippi man, Kevin Curtis, who was released from jail after a search of his home revealed no incriminating evidence.

Dutschke’s name first surfaced when Curtis’ attorney suggested in a court hearing that her client had been framed by someone, and mentioned a running feud between Dutschke and Curtis.

Saturday’s announcement did not specify if Dutschke was being charged in relation to the ricin letters, but it noted that the investigation had been conducted by several federal agencies including the U. S. Postal Inspection Service and U.S. Capitol Police.

Dutschke’s attorney, Lori Basham, did not return calls seeking comment, but she told Reuters earlier in the week that her client denied having anything to do with the ricin letters.

Dutschke is expected to appear in U.S. District Court in Oxford, Mississippi, on Monday.

Federal agents initially targeted Curtis, an Elvis impersonator, in their efforts to find who sent the letters laced with ricin.

Letters addressed to Obama and Senator Roger Wicker, a Mississippi Republican, were retrieved last week at off-site mail facilities before reaching their intended victims. A Mississippi state judge also received a ricin-laced letter.

Discovery of the letters fueled more national anxiety in the days after the bombing at the Boston Marathon.

(Additional reporting by Emily Lane in Jackson, Mississippi, Marilyn W. Thompson and Susan Cornwell in Washington; Writing by David Adams; Editing by Sandra Maler and Peter Cooney)

For full report please check:

<http://www.reuters.com/article/2013/04/27/us-usa-security-ricin-arrest-idUSBRE93Q07420130427>

Gas attack fears as 74 Afghan school girls examined for poisoning

April 22, 2013

As many as 74 school girls in Afghanistan’s far north have fallen sick after smelling gas in the air, and are being examined for possible poisoning. Some of them remain in a critical condition in hospital raising fears the school was attacked.

Local officials said the girls became ill after noting a gas smell in the air at their school, Bibi Maryam, in the Taluqan, the capital of the Takhar Province, about 250 kilometers north of the Afghan capital Kabul.

The girls were taken to hospital and although most were released after being treated, some are still in a critical condition, Dr. Jamil Frotan, the head of the hospital, told Reuters on Sunday evening.

“We have already sent samples of their blood to the Ministry of Public Health and it will soon become clear what the reason for their illness was,” Frotan said.

Sulaiman Moradi, The Takhar governor’s spokesman, said “enemies of the government and the country” were to blame and said the aim was to stop the girls going to school.

No one has claimed responsibility for the attack, but there have been numerous substantiated cases of mass poisonings of schoolgirls by elements of Afghanistan’s ultra conservative society who remain opposed to female education. The Taliban are just one section of a highly conservative society sharing such beliefs.

The suspected poisoning comes three days after more than a dozen students fell ill at another girl’s high school in Talugan. The incident also remains unexplained.

Four poisoning attacks in girls’ schools in Takhar between May and June last year, prompted local officials to order the head teachers to stay at school until late, to test the water for contaminants and for staff to search the grounds for suspicious looking objects.

Takhar has been a hotbed of criminal activity and militancy since 2009, with the Taliban and the Islamic Movement of Uzbekistan highly active in the province.

Since the Taliban were ousted in 2001 females have returned to schools especially

Afghan women have won back basic rights in education, voting and employment since 2001, but fears remain that these gains could be traded away as western forces prepare to leave the country in 2014 and the Afghan government seeks peace talks with the Taliban.

<http://rt.com/news/afghan-girls-school-gassed-218/>

DEVELOPMENTS IN SCIENCE AND TECHNOLOGY

RTA could lessen dangers of chemical, biological warfare

May 9, 2013

Defense Advanced Research Projects Agency

For more than 50 years, researchers have been studying exactly how aspirin affects the human body. Despite thousands of publications on the topic, our understanding is still incomplete.

Meanwhile, novel chemical and biological weapons have historically been mass produced within a year of discovery. Using current methods and technologies, researchers would require decades of study to gain a robust understanding of how new threat agents exert effects on human biological systems.

That capability gap leaves U.S. forces vulnerable, so DARPA’s new five-year program, Rapid Threat Assessment, sets an aggressive new goal for researchers: develop methods and technologies that can, within 30 days of exposure, map the complete molecular mechanism through which a threat agent alters biochemical processes in human cells. The developed technologies

must identify the cellular components and mechanistic events that take place over a range of times, from the milliseconds immediately following exposure to the threat agent, to the days over which alterations in gene and protein expression might occur. The molecular mechanism must also account for molecular translocations and interactions that cross the cell membrane, cytoplasm and nucleus.

“Understanding the molecular mechanism of a given threat agent would provide researchers the framework with which to develop medical countermeasures and mitigate threats,” said Barry Pallotta, DARPA program manager. “If the RTA program is successful, potential adversaries would have to reassess the cost-benefit analysis of using chemical or biological weapons against U.S. forces that have credible medical defenses.”

Threat agents, drugs, chemicals and biologics interfere with normal cell function by interacting with one or more molecules associated with the cell membrane, cytoplasm or nucleus.

Since a human cell may contain up to 30,000 different molecules functioning together in complex, dynamic networks, the molecular mechanism of a given threat agent might involve hundreds of molecules and interactions. The technologies sought by RTA would identify the molecular targets of threat agents and the complex interactions that follow.

“Introducing a threat agent into a cell sets off a chain of interactions that propagate throughout the cell much like the pattern of ripples that result from throwing a pebble into a pond,” said Pallotta.

“Unfortunately, current research tends to be highly specialized, examining effects on very

specific proteins or lipids and so on, which is why a drug like morphine is still being studied almost 200 years after its introduction. For this reason, DARPA is demanding a comprehensive approach that identifies all of the affected components and interactions at once against a background of inherent complexity.”

To help navigate this complexity, program performers will have to discover the series of events in the molecular mechanism at time intervals from initial introduction of a threat agent to a period of several days of exposure. This could be accomplished by freezing cells at various points in time to capture interactions as they unfold. This approach will help researchers discover the actual sequence of molecular events initiated by the threat agent.

While providing a framework for the development of medical countermeasures to chemical and biological weapons, successful RTA technologies would also be readily applicable to drug development and treatments for disease. In both cases, detailed knowledge of molecular mechanism is one of the ingredients that enable new drugs to win approval or diseases to be treated.

DARPA hopes to pair technologies developed during the RTA program with its Microphysiological Systems program, which is building “human-on-a-chip” technology. By introducing threat agents or proposed countermeasures to the human-on-a-chip system, researchers could observe which human cell types are affected, and use RTA technologies to elucidate the specific molecular mechanisms in the affected cells.

http://www.fortcampbellcourier.com/news/article_fa9c06d4-b8eb-11e2-a657-0019bb2963f4.html

Could smallpox really be turned into a biological weapon by terrorists?

*Tamara Hinson
April 08, 2013*

It killed the Egyptian pharaoh Ramses V in 1145 BC, Tsar Peter II of Russia in 1730 and more than 300m people in the 20th century.

Smallpox originates from thousands of years ago and was officially eradicated at the end of the 1970s, but the infectious disease has only recently been downgraded as a potential terror threat.

It emerged last month that the British government quietly decided that the possibility of terrorists using the virus in a biological attack was too far-fetched.

It led to criticism from the science community that former prime minister Tony Blair had wasted millions of pounds in preparing for a threat which seemed unlikely to materialise.

He spent £79m on smallpox vaccines in 2002, a controversial move given that

It was a purchase which was heavily criticised, not least for the fact that £32m of that money went to a company owned by Labour donor Paul Drayson.

By 2005, the Department of Health had vaccinated 516 volunteers – including 147 doctors, 164 nurses and 100 ambulance staff – who would, in theory, have been able to deal with any suspected or confirmed case of smallpox.

However, reports published in 2006 and 2011 suggest that the vaccination programme had floundered and that many of those vaccinated had not been

revaccinated, which was necessary to maintain their immunity.

In papers leaked last month which revealed the terror threat downgrade, ministers said that preparations were too expensive, ‘unwieldy’ and not ‘proportionate’.

For full report please check:

<http://metro.co.uk/2013/04/08/could-smallpox-really-be-turned-into-a-biological-weapon-by-terrorists-3585028/>