

prevention and treatment is determined by terms within which the bioagent is identified.

Direct and rapid spore detection by antibodies based detection system is very attractive alternative to current PCR-based assays or routine phenotyping which are the most accurate but are also complex, time-consuming and expensive. The main difficulty with respect to such kind of anthrax spores detection is a cross-reaction with spores of closely related bacteria. For development of species-specific antibodies to anthrax spores recombinant scFvs or hybridoma technique were used. In both case surface spore antigens contained species-specific epitopes are need. Among exosporium proteins only ExsF(BxpB), ExsK and SoaA are specific to *B.cereus* group. On the surface of *B. anthracis* spores, a unique tetrasaccharide containing an novel monosaccharide – anthrose, was discovered. It was shown that anthrose can be serving as species-specific target for *B. anthracis* spores detection. We have revealed that EA1 isolated from spore of Russians strain ST1-1 contain carbohydrate which formed species-specific epitopes and determine immunogenicity of this antigen. Antibodies to this antigen specifically recognized the surface target of *B. anthracis* spores and do not reacted with others *Bacillus* spore. Based on these antibodies we developed the test-systems in different formats for rapid direct detection and identification of *B. anthracis* spores.

The results of trial these test-systems with using more than 50 different *Bacillus* strains were indicated that carbohydrate of EA1 isolated from spore is effective immunodiagnostic target for anthrax spores biodetection.

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9. AN INTEGRATED APPROACH TO RISK ASSESSMENT AND MITIGATING THE CBRN THREAT

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CBRN mass casualty events threat mitigation remains today the highest international priority. Although significant progress has been made, the national security requirements for efforts to combat Weapons of Mass Destruction and Weapons of Mass Disruption will be of the highest national priority in the near future. An integration of a number of approaches is essential in the risk assessment and mitigating the CBRN treat. Preparedness measures and procedures, engineering, science and technology, policy, medical, and emergency response are essential to reduce the threat

from the proliferation and use of weapons of mass destruction (WMD). Improved coordination between international, public and private security entities is also essential task to hopefully prevent the terrorist attacks. In this lecture, it will be presented very important scientific approach to risk assessment of potential use of nuclear, radiological, biological or chemical weapons in terrorist actions. An integrated approach for mitigating the CBRN threat, crisis management and preparedness measures for prevention and reduction of potential consequences, will be presented.

Key Words/Phrases: Mitigating the CBRN threat, Risk assessment, CBRN Mass Casualty Events

10. EXPLOSIVE DEVELOPMENTS IN BIOTECHNOLOGY AND THE ROLE OF BTWC IN STRENGTHENING A GLOBAL BIOSECURITY / BIOSAFETY

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The international community is confronted by a unique challenge in dealing with the threat posed by the potential use of biology and the life sciences in hostile purposes. As we know, the Biological Weapons Convention (BWC) entered into force thirty four years ago. It is a simple instrument, only a few pages long, but its prohibitions are clear, succinct, categorical and definitive, but it is an instrument of principle rather than procedure.

Relevant resources of biological and toxin agents, technologies and knowledge are more numerous and more widely distributed than their equivalents in other disarmament fields (chemical, radiological or nuclear). In the 1990s, negotiations were begun on a protocol to strengthen and verify the BWC, which would have added to the Convention the verification elements present in other regimes. After many years of work, this effort collapsed in disagreement and recrimination in 2001.

After the Fifth Review Conference in 2002, BWC States Parties succeeded to establish a work program for 2003 to 2005, at which they would work on several specific topics related to better implementation of the Convention. With that approach of the work, the necessary network of collaboration and coordination were developed into a flexible oversight and prevention of the biological and toxin weapons. Experts from all around the world gathered to share experiences and ideas on how to deal with the threat posed by biological weapons. Officials from health, science and agriculture ministries made connections with their counterparts in defense, justice, foreign affairs and security agencies.

The explosive developments in biotechnology represent today serious threat and no government or international organization could hope to monitor effectively the tens of thousands of small biotechnology facilities in operation worldwide. Intelligible, this is a problem that needs a collective, multifaceted and multidimensional approach.