

features of substances. All the participants in the security chain have to be familiar with and consistently obey the legal regulations. The manufacturer must know the features of the hazardous substance, supervisory services must be acquainted with the threat and potential danger. The hauler and intervention forces must, in case of accidents and damage, be familiar with the emergency procedures in case of accidents and act properly regarding the threatening dangerous substance.

Key Words/ Phrases: danger, transport of hazardous substances, security

6. HAZARDOUS SUBSTANCES SHIPPING AT INLAND WATER HARBORS

Željko Benković

MS

Sinaco d.o.o.

Savska cesta 41/XIII

10000 Zagreb, Croatia

Safety measures and regulations system covering the aspects of fire protection, professional and ecological safety are aimed to create a safe working environment, by detection and remedy of conditions that are potentially hazardous for the wellbeing of the employees or are leading to certain undesired events. Such unwanted incidents may result in different consequences: operating person's injury, environment pollution or material damage.

This study attempts to illustrate the organization of work during hazardous matter loading and unloading at inland water harbors, based on legal provisions and decrees involving safety precautions, and in order to achieve constant enhancement of operating procedure, decreasing thereby the number of work-related injuries and various accidental situations.

Fundamental precondition required to prevent possible accidents and to optimize general safety policy is to recognize and control any danger or potential hazard, as well as to be familiar with the legal provisions covering the inland waterway transport of harmful substances.

Key Words/ Phrases: hazardous substances, inland navigation, inland waterways, loading, unloading



Željko Benković finished high educational school in Zagreb. 2003 graduated on High school for security in Zagreb and obtained diploma as an engineer of security – protection at work. 2006 graduated on the very same faculty and obtained diploma for engineer of security – fire protection. Since 2004 working in company „Sinaco” member of INA group as a Specialist I. Until now he published several paper works and was a lecturer on different domestic and international conferences and meetings. He is a member of several

professional associations. He speaks German and English language. Special education: certificate for ISO auditor.

7. THE CHARACTERISTICS OF EXOSPORIUM ANTIGENS FROM DIFFERENT VACCINE STRAINS OF BACILLIUS ANTHRACIS

Eugenia Baranova, Sergey Biketov, Igor Dunaytsev, Raisa Mironova, Ivan Dyatlov, State Research Center for Applied Microbiology and Biotechnology, Obolensk, Moscow region, 142279, Russia

ABSTRACT

To develop of both test-systems for rapid detection and identification of *B. anthracis* spores and a new subunit vaccine the antigens on the spore surface should be characterized.

Exosporium consists of two layers-basal and peripheral and has been formed by protein, amino- and neutral polysaccharides, lipids and ash. Number of anthrax exosporium proteins was described and identified: glycoprotein BclA, BclB, alanine racemase, inosine hydrolase, glycosyl hydrolase, superoxid dismutase, ExsF, ExsY, ExsK, CotB, CotY and SoaA.

So far no glycosylated proteins other than highly immunogenic glycoproteins BclA, BclB were detected in the *B. anthracis* spore extract although several exosporium-specific glycoproteins have been described in other members of the *B. cereus* family- *B. thuringiensis* and *B. cereus*.

Although EA1 protein originally described as main component of S-layer from vegetative cells he can regular observed in different exosporium preparations and additionally some anti- EA1 monoclonal antibodies able to recognize spore surface. We have revealed that EA1 isolated from spore of Russian strain STI-1 contain carbohydrate which determine immunogenicity of this antigen. Because some time ago we have found that exosporium protein's pattern variable among *B. anthracis* strains we investigated exosporium from spore of different strains of *B. anthracis* including STI-1, Ames, Stern and others.

We have comparative characterized antigens by using Western Blotting, Two-Dimensional electrophoresis and Mass Spec analysis. The results of analysis will be presented and discussed.

8. THE SEARCH AND IDENTIFICATION OF NEW IMMUNODIAGNOSTIC TARGETS OF BACILLUS ANTHRACIS SPORE

Sergey Biketov, Igor Dunaytsev, Eugenia Baranova, Leonid Marinin, Ivan Dyatlov, State Research Center for Applied Microbiology and Biotechnology, Obolensk, Moscow region, 142279, Russia

ABSTRACT

Spores of *Bacillus anthracis* have been used as biowarfare agent to bioterrorize purposes. As efficiency of anti-epidemic measures included urgent