

41. EVALUATION OF POTENTIAL BIOLOGICAL THREATS IN UKRAINE (14)

Dr. Lyudmyla Pozdnyakova, Nina Slavina, Sergiy Pozdnyakov
Ukrainian I. I. Mechnikov Anti Plague Research Institute, Tserkovnaya str. 2/4, Odessa, 65003, Ukraine

Dilating of biological threats spectrum, EDI diffusion opportunities and routes, unpredictability of outbreaks connected with connatural, technogenic, terrorist factors determines constant monitoring and readiness for operative BPA indication and identification.

Scientific analytical approach of existing and probable regional bio-threats evaluation is necessary for adequate readiness system creation and maintenance of medical counteraction tactics to probable biological threats.

Basing on the international experience, we carry out analysis of a situation present in Ukraine and routes for the decisions.

The basic directions are:

- Evaluation of a reality for EDI penetration from abroad and presence of conditions for their further diffusion inside the country.
- Revealing of presence and definition of connatural EDI foci biocenosis features and BPAs.
- Appropriate level of biological safety and physical protection of bio-laboratories and pathogens collections maintenance.
- Gene/molecular and phenotypical definition of EDI circulating strains.
- Creation of the circulating EDI gene/ phenotypic characteristics regional data bank.
- Ranging of EDI actual for area.
- Introduction of GPT, mathematical modeling and forecasting for tactics development in case of technogenic accidents and connatural outbreaks.
- Methodical basis and equipment improvement for BPA system indication for well-timed identification of natural, or modified agent.
- Education and trainings

The international cooperation in maintenance of biosafety and bioprotection within the framework of scientific programs, grants, exchange of experience, introduction of international standards and rules are among basic factors in the decision for creating system national biosafety for countries not included in EU and the NATO.

42. JOURNAL OF MEDICAL CHEMICAL, BIOLOGICAL AND RADIOLOGICAL DEFENSE (14)

Dr. Barbara Price, ASA, PO Box 6409, Kaneohe, Hawaii 96744, USA

The Journal of Medical Chemical, Biological, and Radiological Defense is a free, on-line journal

dedicated to providing an international, peer-reviewed journal of original scientific research and clinical and doctrinal knowledge in the area of medical treatment and countermeasures for chemical, biological and radiological defense; and to developing and maintaining an archive of current research and development information on training, doctrine, and professional discussions of problems related to chemical, biological and radiological casualties.

The Journal, www.JMedCBR.org, now in its fifth year, is sponsored by the US Defense Threat Reduction Agency.

Areas of interest include, but are not limited to:

- Neuroprotectants
- Bioscavengers for Nerve Agents
- Medical Diagnostic Systems and Technologies
- Medical Effects of Low Level Exposures
- Toxicology and Biological Effects of TICs and TIMs
- Broad Spectrum Medical Countermeasures
- Pretreatments and Therapeutics for Bacterial, Viral and Toxin Agents
- Radiological Medical Countermeasures
- Clinical Treatment of Chemical, Biological or Radiological Casualties
- Toxins Structures and Treatments

The Journal is supported by an editorial advisory board of distinguished scientists and researchers in the fields of CBR defense and medical treatment and countermeasures in eleven countries.

43. PROTEIN CHANGES IN SULFUR MUSTARD EXPOSURE: DIAGNOSTIC AND THERAPEUTIC IMPLICATIONS (4)

¹Dr. Prabhati Ray, ¹Dr. Xiannu Jin, Dr. ²Radharaman Ray

¹Molecular Biology Section, Division of Experimental Therapeutics, Walter Reed Army Institute of Research, Silver Spring, MD 20910, USA

²Cell and Molecular Biology Branch, Research Division, US Army Medical Research Institute of Chemical Defense, APG, MD 21010, USA

Laminin-5, a heterotrimer of laminin $\alpha 3$, $\beta 3$, and $\gamma 2$ subunits, is a component of the skin basal epithelium. Laminin-5 functions as a ligand of the $\alpha 3\beta 1$ and $\alpha 6\beta 4$ integrins in epidermal keratinocytes to regulate cell adhesion, migration, morphogenesis, and assembly of basement membranes; thus it is essential for a stable attachment of the epidermis to the dermis and recovery of damaged skin. Sulfur mustard (SM), also known as mustard gas, is a vesicant chemical warfare and terrorism agent.

Skin exposure to SM results in fluid-filled blisters; proposed mechanisms are inflammation, protease stimulation, basal cell death, and separation of the epidermis from the dermis apparently due to the degradation of attachment proteins like laminin-5.

Therefore, we investigated the effects of SM exposure on the degradation of laminin-5 by exposing normal human epidermal keratinocytes (NHEK) to SM