

## SPECIFIC SUBSTANCES FOR DIAGNOSIS AND THERAPY OF RADIATION INJURY

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**Abstract.** Radiation toxins induce high toxicity reactions after exposure. Acute Radiation Disease (ARD) or Acute Radiation Syndromes (ARS) are defined as the collective toxic clinical states observed from the acute pathological processes in various doses in irradiated mammals.

Multifactor fundamental research under experimental and industrial conditions on farm and laboratory animals (parabionts, gnotobionts, mice, rats, rabbits, dogs, sheep, pigs, cattle, and horses), and also on humans (blood serum of Chernobyl NPP clean-up workers) conducted between 1982 and 2002 enabled us to establish the existence of two previously unknown phenomena:

- the phenomenon of reversible redistribution of cytobiochemical parameters in the blood- interstices-lymph-blood system of irradiated animals, which supports compensatory maintenance of homeostasis;
- the phenomenon of specific immunochemical reactions to the radiobiological effect, involving the formation of high molecular mass glycoprotein (molecular mass-200- 250 kDa) – radiation antigens in the lymphoid system with epitopes specific to each form of radiation sickness 1, 2, 3, 4, after animals have been irradiated in doses inducing the development of the cerebral (1), toxic (2), gastrointestinal (3) and typical (4) forms of acute radiation sickness.

These two phenomena allowed us to develop a methodology for producing specific means of prevention, diagnosis, and treatment of radiation sickness (know-how) with antiradiation vaccine, a serum and a set of diagnostics for conducting ELISA analyses.

**Keywords:** radiation antigens, radiation injury, diagnostics, therapy.