

DEVELOPMENT OF A NEW ANTITUBERCULOUS PREPARATION USING RADIATION TECHNOLOGY

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In recent years it is more and more often reported about usage of the electron accelerators for production of new medical preparations. Usage of the electron beam technology permits to dispense with the expensive time- and labor-consuming processes of purification of a final product from intermediate chemical agents and products. The electron accelerators are the most suitable sources because they provide high dose power rate, easy control and reproducibility of process.

The report describes the technology for production of a new antituberculous preparation "Isodex" based on the well-known preparation "Tubazid" (hydrazide of the isonicotinic acid or "Isoniazidum"). The essence of the problems in treatment of tuberculosis is absence of the drugs equally effective for action on *Micobacterium tuberculosis* circulating in blood and lymph and persisting in the cells of immune system (phagocytes). The persisting micobacteria possess the high resistivity towards the basic anti-tuberculous preparations (isoniazidum, rifampicinum, pyrazinamidum, etc.) because these preparations do not have the ability to be selectively accumulated in phagocytes containing persisting micobacteria. So there is the necessity to develop the antimicobacterial preparations capable to be selectively "delivered" for action on endocellular tuberculous bacterial population. One of the ways to achieve this is immobilization of tuberculostatic preparation on lymphotropic polysaccharide.

We have chosen dextrane produced from *Leuconostoc mezenoides*. This polysaccharide is widely used as a blood substitute. We used the electron accelerator for radiation activation of dextrane and following immobilization of tubazid on it.

The new antituberculous drug "Isodex" is a balanced mixture of free tubazid and tubazid immobilized on dextrane. The medical testing of "Isodex" have shown its lower toxicity and prolonged action in comparison with "Tubazid". The special feature of "Isodex" is its ability to be absorbed by macrophages which are the main places of persistence and vegetation of *Micobacterium tuberculosis*.