

SDI FINAL EVALUATION FORM 1.1

Journal Name:	<u>International Research Journal of Pure and Applied Chemistry</u>
Manuscript Number:	2012_IRJPAC_2622
Title of the Manuscript:	Comparison of Biophysical and Radiological Responses of Bio-test objects to Pulsed and Continuous X- and Neutron-Irradiations

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
The authors have taken in consideration the reviewers' comments and made some relevant corrections to the paper as requested, but the general structure of the manuscript need to be further improved to reach the required standard of this journal. A revision by a native speaker would be appreciated as well checking the character format: still occasionally has some minor flaws. The Discussion section is fairly presented, but there are significant weaknesses. Some parts concerning the general description of the biological test should be better detailed. The authors should consider the following suggestions that could improve the manuscript.	We agree and we made our best (please, see below).
Abstract Methodology: As biological test objects of different contents and complexity we used enzymes of various types, serum, seminal fluid, yeasts, human lymphocytes, mice bone marrow, etc.	Methodology: As biological test objects of different contents and complexity we used enzymes of various types, serum, seminal fluid, yeasts, human lymphocytes, mice bone marrow, etc. Strikethrough words must be deleted.

Line 25 Цыб АФ, Ульянов СЕ, Мардынский ЮС, Соколов ВА. Нейтроны в лечении злокачественных новообразований. Научно-методическое пособие. Обнинск: БИСТ; 2003. Russian.	Tsyb AF, Ulyanenko SE, Mardynskii YS., Sokolov VA. The use of neutron for malignant tumour treatment. Textbook. Obninsk: BIST, 2003, 112 p.
Line 30 In particular, neutron therapy would be prescribed for about 20% of oncologic patients provided that the selectivity of this method will be improved by 4-5 times (reference)	Shahri KK, Motavalli LR, Hakimabad HM. Neutrons applications in cancer treatment and in specific diagnostics. Hell J Nucl Med. 2011;14(2):110-113.
Line 34 Under correct patient choice and at the proper quality assurance (QA) procedures for patient dosimetry implemented at neutron therapy (see e.g. [2]) the therapy allows at least 20% enhancement of direct and long-term treatment results [3, add fresh reference].	Shahri KK, Motavalli LR, Hakimabad HM. Neutrons applications in cancer treatment and in specific diagnostics. Hell J Nucl Med. 2011;14(2):110-113.
Line 45 Some problems are poorly studied here. Such issues relate to dosage [1], obtained by the intermediate layers of organism when a deeply located tumor is under irradiation (additional text), in particular at short neutron pulses. It is also connected with the neutron scattering and penetration within organism at the combined irradiation modes (X/gamma-rays and neutron irradiation, fast/epithermal/thermal neutron irradiation, etc.) [1].	Some problems are poorly studied here. Such issues relate to dosage [1], obtained by the intermediate layers of organism when a deeply located tumor is under irradiation (surrounding tissues finding over the tumor), in particular at short neutron pulses. It is also connected with the neutron scattering and penetration within organism at the combined irradiation modes (X/gamma-rays and neutron irradiation, fast/epithermal/thermal neutron irradiation, etc.) [1]. * D'errico F, Nath R, Silvano G, Tana L. In vivo neutron dosimetry during high-energy bremsstrahlung radiotherapy. <u>Int J Radiat Oncol Biol Phys.</u> 1998;41(5):1185-1192.

Line 143-146 As biological test objects of different contents and complexity we used enzymes of various types (angiotensin converting enzyme, different plant peroxidases), serum, seminal fluid, yeasts, human lymphocytes, mice bone marrow (splenic colony-forming units), mice of line Black and F1 (CBA□C57B1), etc.	As biological test objects of different contents and complexity we used enzymes of various types (angiotensin converting enzyme, different plant peroxidases), serum, seminal fluid. , yeasts, human lymphocytes, mice bone marrow (splenic colony-forming units), mice of line Black and F1 (CBA□C57B1), etc. (Deleted)
Line 165 Special measures on the following lines were provided during the experiments:	Measures on the following lines were provided during the experiments:
Line 176 In a course of the experiments same objects were irradiated in different conditions	In a course of the experiments biological test objects were irradiated in different conditions
Somatic and testicular forms of angiotensin converting enzyme (ACE) as well as some complicated [??? Please specify] compositions containing dissimilar concentrations of ACE (blood serum and seminal fluid) at variations of conditions of an enzyme existence and on parameters of powerful pulsed and stationary sources of irradiation were investigated. Besides the short-pulsed powerful irradiation influence on different types of plant peroxidases were examined. These experiments in certain cases have shown appearance of deviations in catalytic activity (both activation and inactivation) at super-low doses of X-ray radiation (by 4...5 orders of magnitude lower compared with the case of the isotopes' sources) but at a very high dose power (by 8...9 orders of magnitude higher than in the case of irradiations by isotopes).	Somatic and testicular forms of angiotensin converting enzyme (ACE) as well as some complicated compositions (blood serum and seminal fluid) containing dissimilar concentrations of ACE at variations of conditions of an enzyme existence and on parameters of powerful pulsed and stationary sources of irradiation were investigated... Here we have resumed our previous works in this direction [11 – 15].
Line 318 In these our experiments especially the dose region nearby $D \approx 10^{-4} - 10^{-5}$ Gy was marked.	In these our-(deleted) experiments especially the dose region nearby $D \approx 10^{-4} - 10^{-5}$ Gy was marked.

Line 352 Results obtained with reactors versus ⁶⁰Co-source are shown in Fig. 6.	Our results obtained with reactors versus ⁶⁰Co-source are shown in Fig. 6.
Line 412 As the bio-test objects we used enzymes of various types (like angiotensin converting enzyme, different plant peroxidases), serum, seminal fluid, yeasts, human lymphocytes, mice bone marrow, mice of line Black and F1 (CBA/C57B1), etc.).	As the bio-test objects we used enzymes of various types (like angiotensin converting enzyme, different plant peroxidases), serum, seminal fluid, yeasts, human lymphocytes, mice bone marrow, mice of line Black and F1 (CBA/C57B1), etc.) (deleted).