



Published in final edited form as:

Phys Med. 2024 August ; 124: 103375. doi:10.1016/j.ejmp.2024.103375.

Corrigendum to “Prediction of DNA rejoining kinetics and cell survival after proton irradiation for V79 cells using Geant4-DNA” [Phys. Med. 105 (2023) 102508]

Dousatsu Sakata^{1,2,*}, Ryoichi Hirayama³, Wook-Geun Shin⁴, Mauro Belli^{5,a}, Maria A. Tabocchini^{6,a}, Robert D. Stewart⁷, Oleg Belov^{8,9}, Mario A. Bernal¹⁰, Marie-Claude Bordage^{11,12}, Jeremy M.C. Brown^{13,14,15}, Milos Dordevic¹⁶, Dimitris Emfietzoglou¹⁷, Ziad Francis¹⁸, Susanna Guatelli¹⁴, Taku Inaniwa¹, Vladimir Ivanchenko^{19,20}, Mathieu Karamitros²¹, Ioanna Kyriakou¹⁷, Nathanael Lampe²², Zhuxin Li²³, Sylvain Meylan²⁴, Claire Michelet²³, Petteri Nieminen²⁵, Yann Perrot²⁶, Ivan Petrovic¹⁶, Jose Ramos-Mendez²⁷, Aleksandra Ristic-Fira¹⁶, Giovanni Santin²⁵, Jan Schuemann²⁸, Hoang N. Tran²³, Carmen Villagrasa²⁶, Sebastien Incerti²³

¹Department of Accelerator and Medical Physics, Institute for Quantum Medical Science, National Institutes for Quantum Science and Technology (QST), Chiba 263-8555, Japan

²Division of Health Sciences, Osaka University, Osaka 565-0871, Japan

³Department of Charged Particle Therapy Research, Institute for Quantum Medical Science, National Institutes for Quantum Science and Technology (QST), Chiba 263-8555, Japan

⁴Department of Radiation Oncology, Seoul National University Hospital, Seoul 03080, Republic of Korea

⁵Independent Researcher, Rome, Italy

⁶Istituto Nazionale di Fisica Nucleare (INFN)-Roma 1, Rome, Italy

⁷Department of Radiation Oncology, University of Washington, WA 98195-6043, USA

⁸Veksler and Baldin Laboratory of High Energy Physics, Joint Institute for Nuclear Research, 141980 Dubna, Russia

⁹Institute of System Analysis and Management, Dubna State University, 141980 Dubna, Russia

¹⁰Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Campinas, SP, Brazil

¹¹INSERM, Université Paul Sabatier, UMR 1037, CRCT, Toulouse, France

¹²Université Toulouse III-Paul Sabatier, UMR 1037, CRCT, Toulouse, France

¹³Department of Physics and Astronomy, Swinburne University of Technology, Hawthorn, Australia

This is an open access article under the CC BY-NC-ND license (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

*Corresponding author at: Department of Accelerator and Medical Physics, Institute for Quantum Medical Science, National Institutes for Quantum Science and Technology (QST), 4-9-1 Anagawa, Inage-ku, Chiba-shi, Chiba, 263-8555, Japan. sakata.dousatsu@qst.go.jp, dousatsu@sahs.med.osaka-u.ac.jp, dosatsu.sakata@cern.ch (D. Sakata).

^aFormerly Istituto Superiore di Sanità, Rome, Italy.

- ¹⁴Centre For Medical Radiation Physics, University of Wollongong, Wollongong, Australia
- ¹⁵Department of Radiation Science and Technology, Delft University of Technology, The Netherlands
- ¹⁶Vinca Institute of Nuclear Sciences - National Institute of the Republic of Serbia, University of Belgrade, Belgrade, Serbia
- ¹⁷Medical Physics Laboratory, Department of Medicine, University of Ioannina, GR 45110, Ioannina, Greece
- ¹⁸Saint Joseph University of Beirut, UR Mathématiques et Modélisation, Beirut, Lebanon
- ¹⁹Geant4 Associates International Ltd, Hebden Bridge, UK
- ²⁰Tomsk State University, Tomsk, Russia
- ²¹Independent Researcher, Bordeaux, France
- ²²Independent Researcher, Victoria, Australia
- ²³Univ. Bordeaux, CNRS, LP2I Bordeaux, UMR 5797, F-33170 Gradignan, France
- ²⁴Independent Researcher, Paris, France
- ²⁵ESA-ESTEC, Noordwijk, The Netherlands
- ²⁶IRSN, Institut de Radioprotection et de Surete Nucleaire, 92262 Fontenay-aux-Roses, France
- ²⁷Department of Radiation Oncology, University of California San Francisco, San Francisco 94143, CA, USA
- ²⁸Physics Division, Department of Radiation Oncology, Massachusetts General Hospital & Harvard Medical School, Boston, MA, USA

The authors regret having incorrectly written in equation (7) that the fraction of surviving cells (SF) is obtained using the natural logarithm of the negative value of the number of lethal lesions L_f .

The natural logarithm must be replaced by the exponential function as follows:

$$SF = \exp(-L_f) \tag{7}$$

Although the equation is incorrectly written in the paper, its correct expression has been used in the results of the analysis shown in Figure 4. This error has no impact on the other results and conclusions of the paper.

The authors would like to apologise for any inconvenience caused.