

### **PHOTOGEM®**

Photosensitizer PHOTOGEM® is a hematoporphyrin derivative. This unique medication is used in photodynamic therapy (PDT) of malignant tumors of various localizations.

PHOTOGEM® PDT method was developed in Russia. The method has been tested and is currently used in the leading oncological research institutions in Russia and other countries. Although the product has been extensively studied and used abroad in clinical setting, TimTec currently offers PHOTOGEM® in the USA for research and development applications only.

Please [contact us](#) with inquiries and to order

Photogem samples are available from TimTec for R&D applications only and are not for human use. Presented facts are reported based on the product use in Russia.

### **About**

PHOTOGEM® is the unique photodynamic drug therapy (PDT) of malignant tumors.

The clinical studies were successfully completed with more than 1,500 patients having undergone the courses of Photogem® (PDT) medical treatment in 1996.

Clear therapeutic effect was observed in 91% of the cases. A complete disappearance of malignant growth was observed in 62% of the cases, and partial regression (decrease of a

tumor by more than twice) was observed in 29% of the cases. At the early cancer stages complete recovery of the patients was documented in 92% of the cases.

According to the leading oncologists' conclusion PHOTOGEM® medical treatment is a highly promising high-performance photodynamic cancer drug therapy.

PHOTOGEM® was registered and approved by Ministry of Health of Russian Federation (order of MHRF #47, 10th of February, 1999). Number of oncological centers and hospitals have PHOTOGEM® PDT treatment now available.

For instance, Moscow Research Oncological Institute named after P.A.Hertzen (MHRF) is one of the leading Russian medical institutions that widely utilizes various methods of PHOTOGEM® PDT treatment.

The Institute is primarily focused on the radical endoscopic methods of photodynamic drug therapy for the initial, relapse and residual tumors and initially-carcinomatosis of respiratory and digestive tracts, and urogenital system. The Institute is the main base for PHOTOGEM® PDT trainings. The Institute is currently developing new fluorescence diagnostics and PDT methods of the latent early-stage cancer.

### **Other research centers**

State Laser Medicine Research Centre of Russian Academy of Medical Science (RAMS)

Research Oncologic Centre named after N.N. Blokhin

Research Oncologic Institute of RAMS, Siberian Branch

Siberian Centre of Laser Medicine

Central Hospital after Semashko

Medical Radiobiological Research Centre of RAMS

Eye Microsurgery Centre

### **Selected Publications**

Calzavara-Pinton P, Rossi MT, et al. Photodynamic antifungal chemotherapy. *Photochem Photobiol.* 2012 May-Jun;88(3):512-22. doi: 10.1111/j.1751-1097.2012.01107.x. Epub 2012 Mar 1.

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Eun Young Heo, M.D., Yu Jung Kim, M.D., and Seok-Chul Yang, M.D., Ph.D. Fatal Broncho-Mediastinal Fistula in a Patient with Non-Small Cell

Lung Cancer after Photodynamic Therapy. *J Lung Cancer.* 2011 Dec;10(2):102-104. Published online 2011 December 31. <http://dx.doi.org/10.6058/jlc.2011.10.2.102>

Silva TC, Pereira AF, et al. Application of an active attachment model as a high-throughput

demineralization biofilm model. *J Dent.* 2012 Jan;40(1):41-7. doi: 10.1016/j.jdent.2011.09.009. Epub 2011 Oct 1.

Allison RR, Sibata CH. Oncologic photodynamic therapy photosensitizers: a clinical review. *Photodiagnosis Photodyn Ther.* 2010 Jun;7(2):61-75. doi: 10.1016/j.pdpdt.2010.02.001. Epub 2010 Apr 21.

Ferreira, J., Menezes, P.F.C., et al. Comparative study of photodegradation of three hematoporphyrin derivative: Photofrin®, Photogem®, and Photosan®. *Laser Physics Letters.* Oct, 2007. 4 (10), pp.704–767. DOI: 10.1002/lapl.200710058

Giusti J. S. M., Santos-Pinto L., et al. Effectiveness of Photogem® activated by LED on the decontamination of artificial carious bovine dentin. *Laser Physics*, 16(5), Dec 2006, pp. 859-864, DOI: 10.1134/S1054660X06050185

Menezes P. F. C., Imasato H. Correlation of cytotoxicity and depth of necrosis of the photoproducts of photogem®. 17( 4), Oct 2006, pp.461-467, DOI: 10.1134/S1054660X0704024X

Menezes, P.F.C., Melo C. A. S., et al. Dark Cytotoxicity of the Photoproducts of the Photosensitizer Photogem after Photobleaching Induced by a Laser. *Laser Physics*, Vol. 15, No. 3, Sept, 2005, pp. 435–442.

Melo C. A. S., Kurachi C., et al. Pharmacokinetics of Photogem using fluorescence monitoring in Wistar rats. *J Photochem Photobiol B.* 2004 Feb 2004;73(3):183-8.

Bae S.M., Huh S.W., et al. Photogem Induces Necrosis in Various Uterine Cervical Cancer Cell Lines by PDT. *Cancer Res Treat.* 2003 Dec, 35(6), pp.549-55

Menezes, P.F.C., Melo C. A. S., et al. Spectroscopic Studies of Photobleaching and Photoproduct of the Photosensitizer Photogem during Intense Illumination. *Laser Physics*, 14 (9), Sept 2003, pp. 1214–1218.

Chissov V.I., Sokolov V.V., et.al. Clinical fluorescent diagnosis of tumors using photosensitizer photogem. *Khirurgiia (Mosk)*. 1995;(5):37-41.

Chissov V.I., Skobelkin O.K., et.al. Photodynamic therapy and fluorescent diagnosis of malignant tumors using preparation photogem. *Khirurgiia (Mosk)*. 1994 Dec;(12):3-6.

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