

## Tumoricidal effect of nanomaterials along with laser in rhybdomyosarcoma (rd) cell

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The aim of this study was to explore possible photodynamic effects of ultrafine nanomaterials e. g. ZnO nanorods, Fe<sub>2</sub>O<sub>3</sub> nanoparticles bare and conjugated with some efficient photosensitizers e.g. 5-ALA and Photogem® on rhybdomyosarcoma (RD) cell in the presence of optimal dose of laser light (635 nm of red wavelength). Moreover, we studied the photosensitizer's uptake, cytotoxicity, phototoxicity as well as % age cell viability by applying neutral red assay (NRA) and reactive oxygen species (ROS) test. The influence of different incubation times and assessment of optimal concentrations of bare 5-ALA and Photogem® and conjugated with different nanomaterials, different irradiation doses and various possible combinations of photosensitizers and light doses on the viability of RD cells were investigated. After 21 hours of time of incubation significant drug uptake of different photosensitizers was recorded/found.

### Biography

Muhammad Fakhar-e-Alam has completed PhD in field of Physics (Biophotonics) from Pakistan Institute of Engineering and Applied Sciences during 2008-2011. Now, acting as Assistant Professor in department of Physics, Faculty of Basic and Applied Sciences, International Islamic University, Islamabad. His research interests include Photodynamic therapy, drug dynamics in different biological samples, laser tissue interaction.

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