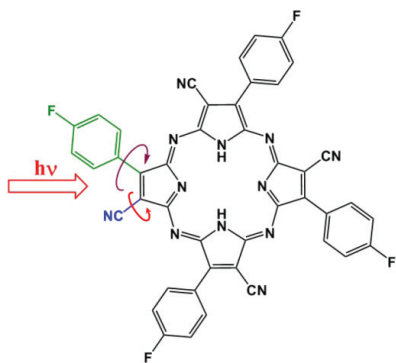


Research (What is it about?)	New teranostic agents
UNN authors	<i>Balalaeva I.V., Klapshina L.G., Lermontova S.A., Shilyagina N.Y.</i>
We find (The result)	We produce a new group of sensitizers for customizable cancer photodynamic therapy with high viscosity-sensitive fluorescence parameters
Abstract	The fluorescent dyes of the porphyrazines class were promising agents for photodynamic therapy, since they could be selectively accumulated in the tumor tissue. The photodynamic therapy is a popular optical method of treatment of various cancer types based on the photoinduced generation of unstable cytotoxic species like singlet oxygen by special dyes (photosensitizers) accumulated in a tumor. The red band fluorescence of the dye allows to localize the tumor and the fluorescence lifetime registration gives one a way to monitor the tumor cells conditions in a real time regime. So we have a teranostic agent which gives a possibility to personal touch in photodynamic therapy when the regime and the time of external action are selected in dependence of the tumor response. New tetraaryltetracyanoporphyrazines have been obtained in the form of metal complexes and free bases via template assembly of a variety of aryltricyanoethylenes as structural units of the macrocycle. The introduction of peripheral phenyl groups in themacrocycle results in a significant growth of quantum yield of fluorescence so the efficiency of sensitizer. The unique high sensitivity of the fluorescent properties to viscosity has been demonstrated. The possibility of customizable cancer photodynamic therapy with this agent has been shown.

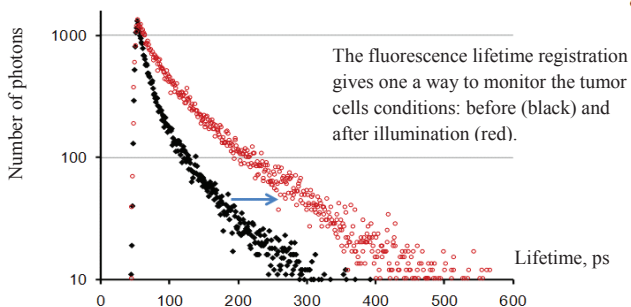
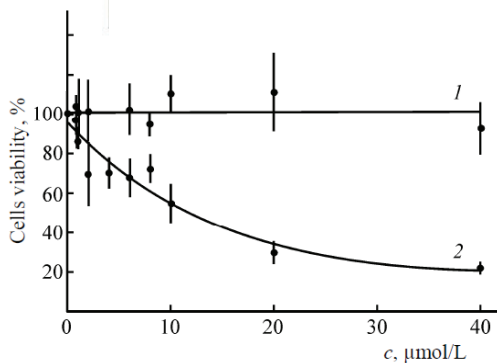
Representative articles 2016-2017, quartiles	1. <i>Lermontova S.A., Grigoryev I.S., Shilyagina N.Y., Peskova N.N., Balalaeva I.V., Shirmanova M.V., Klapshina L.G.</i> New porphyrazine macrocycles with high viscosity-sensitive fluorescence parameters. <i>Russian J. Gen. Chem.</i> 86(6) , 1330-1338 (2016).	Q4
	Q-index (Qi) of the result	
		1

In collaboration	Russian Acad Sci, Razuvaev Inst Organometall Chem, Ul Tropinina 49, Nizhnii Novgorod 603137, Russia Nizhny Novgorod State Med Acad, Nizhnii Novgorod, Russia
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Porphyrazine agent as photosensitizer and molecular rotor

Viability of human urinary bladder carcinoma cells incubated during 4 h with porphyrazine agent at different concentrations (1) in the dark and (2) at illumination (10 J/cm^2 , 615–635 nm).



Customizable cancer photodynamic therapy: monitoring the tumor cells conditions by fluorescence lifetime registration (color markers).

