patients groups that was significantly higher on the 6th day compared to the controls. The induction time of ROS production was longer in the Omegaven group during the examination period than in the control group, and it was significantly longer on the 5th day compared to the Intralipid group. We detected higher catalase activity in Omegaven and in Intralipid group as well, but this activity was significantly lower on the second day in the Omegaven group versus Intralipid group. GSH and PSH levels weren't influenced by the treatment of omega-3 fatty acids.

These data suggest, that polytraumatic injury causes considerable oxidative stress, on which omega-3 fatty acid supplementation has only a moderate effect.

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In vitro toxicity testing of PPI dendrimers

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Dendrimers are a new type of promising synthetic polymers characterized by a dendric branched spherical shape and a high density surface charge. The defined structure of these molecules has led to the interest in dendrimers as substrates for the attachment of antibodies or agents for applications in a number of different areas of biology and medicine. However, information on the mechanisms of dendrimer-induced cytotoxicity and a cell death is still limited. Therefore, it is necessary to undertake studies to determine biological properties of these compounds *in vitro*.

Thus, the aim of our investigation was to compare the effects of poly(propyleneimine) (PPI) dendrimers (PPI with 25% maltotriose units attached to the surface) on cultured human ovarian cancer cells (SK-OV-3) and Chinese hamster ovary cells (CHO). The cells were exposed to various concentrations of dendrimers (ranging from 1 to 300 μM). The toxicity of PPI dendrimers was studied immediately after the incubation with dendrimer (24 h) or 24 h after removing the dendrimer from the medium.

The cytotoxicity of dendrimers was studied by a MTT assay. The morphological features of apoptosis and necrosis were examined by Nomarski DIC combined with a confocal laser scanning microscope (CLSM). The level of reactive oxygen species (ROS) was evaluated with fluorescenct probe: dichlorofluorescein-diacetate (H_2DCFDA) by flow cytometry. Changes in mitochondrial membrane potential were determined using JC-1.

Our studies demonstrated that PPI dendrimers exerted multiple suppressive effects on cancer SK-OV-3 cells, including proliferation inhibition, induction of an apoptotic cell death and a collapse of mitochondrial membrane potential. Most importantly, these compounds were more cytotoxic to cancer cells than to normal CHO cells.

These findings will help to understand the mechanisms of PPI dendrimer cytotoxicity in normal and tumor cells and open the possibility to use them in clinical applications.

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Bioactive compounds in *Alliums* from Vojvodina - antioxidants

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Toughout recorded history *Alliums* especially garlic and onion played rich diverse commercial, culinary, and mystic roles. Today garlic and onion are used for their flavour, aroma and taste, being prepared domestically or forming basic materials for a variety of food manufacturing processes. Onions were among the earliest vegetables to be processed, canned, dried and frozen. Many epidemiological studies have suggested that certain natural foods could prevent the development of different diseases. Garlic and onion are such natural foods. They have a variety of pharmacological effects including tumour cell growth inhibition and chemopreventive activity. Much of the data about human use came from reports of lowered rates and risks of disease (such as cancer) in people with relatively high levels of garlic or other *Alliums* consumption. People also use garlic