

Free radicals are highly reactive species with one unpaired electron in orbital. Reactive oxygen and nitrogen species count among important biologic molecules of radical nature. It is very important to fix a concentration of free radicals in cell on non-toxic limits. Products of radical damage are cumulated extra or intracellularly and they are main components of lipofuscin-like pigments. Lipofuscin-like pigments contains in their molecular structure fluorophores, so they are good substrates for fluorescent analysis.

Alzheimer's disease is a very actual social and economical problem. Etiology of Alzheimer's disease is still unknown. Histologically, the characteristic presence of Alzheimer's disease is a senil plaques of amyloide ?. ROS and RNS diffuse through hematoencephalic barrier in vessel's lumen and attacks red blood cells. Radical damage of erythrocytes is associated with an increase of concentration of oxidative stress products in cytosol.

Sample for fluorescent analysis has been prepared from a red-blood cell extract from 30 patients and 8 healthy controls. Fluorescent spectra of healthy controls have emission maxima in area 327-343nm. In compare with controls, spectra of patients were more heterogenous in area upon 380nm.

The study of oxidative cell damage is important for understanding of pathological processes that that lead to a further progress of the Alzheimer's disease. Medical finding of characteristic markers of radical neurons damage in connection with Alzheimer's disease could be an up-and-coming asset in diagnostic, prophylaxis and therapy of this currently incurable and terminal disease.