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**PAPER TITLE**    MODIFICATION OF RADIATION-INDUCED MEMBRANE AND CELL DAMAGES  
BY HALOGEN-CONTAINING COMPOUNDS (HCC)

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**MODIFICATION OF RADIATION-INDUCED MEMBRANE AND CELL DAMAGES BY**  
**HALOGEN-CONTAINING COMPOUNDS (HCC)**

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It was found a strong increase in UV-radiation (270-300 nm) induced destructive damages of proteins, lipids, and isolated membranes of blood cells and lysis of the cells in the presense of some HCC polluting the environment. The investigations carried out on model systems (tryptophan and protein in solution) indicated that HCC promote the photo-induced breakdown of indol ring. According to chromatographic and spectral characteristics the products formed under such conditions are distinct from earlier known those of tryptophan destruction. The studies on artificial lipid and cell membranes showed that under absorption of UV-radiation of ecological range ( $\lambda > 300$  nm) they are capable to play a role of "inside" photodynamic sensitizers. In the presence of HCC non-connected with the products indicated an increase in photo-induced oxidation of lipids also takes place. This effect was observed on native membranes, but not on liposomes. The form and maximum position of the action spectrum of this process evidence the involvement of protein tryptophan residues and a certain contribution of photodestruction of  $\alpha$ -tocopherol. Similar increase in cell membrane damage in the presence of HCC was registered under ionizing radiation action. The problems of potential danger of discovered modification of radiation-induced damages of cell membranes in functioning cells and organisms under conditions of technogenic environment pollution, augmentation of near-UV component of solar radiation reaching the earth surface and increased radiation background are discussed.