

NEW MORPHOLINIUM SALTS – BIOLOGICAL ACTIVITY

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Interaction of a series of new surfactants with an incorporated antioxidant functional group with erythrocyte membranes (hemolysis), influence on cucumber (*Cucumis sativus*) growth, potassium efflux and chlorophyll content in effusate, and antioxidative activity – was studied. Two chemical tests were performed to check that activity, i.e. linoleic acid (LA) test where inhibition of LA oxidation in the presence of surfactants was observed and chromogen experiments where the ability of a compound to scavenge ABTS radical was determined; the results were compared with Trolox antioxidative activity.

The morpholinium salts (MB) were synthesized for potential use as common biocides or as agents protecting biological membranes against lipid peroxidation. They differed in the length of the alkyl chain attached to the nitrogen atom. They were used as bromides to intensify the interaction with biological objects used.

It was found that hemolytic potency of specific compounds was similar and did not depend on structural differences. The concentrations causing 50% hemolysis were in the micromolar, range for all compounds tested which makes them moderate biocides. The incorporated compounds induced shape changes in erythrocytes, echinocytes being usually observed.

Also, MB moderately influenced all the parameters studied in cucumber experiments and no significant differences were found for any a particular compound.

Studies of ABTS^{•+} scavenging showed that all MB exhibited excellent antioxidative efficiencies, two times higher than Trolox. Taking into account their moderate interaction with membranes, they may be considered to be potentially very good antioxidants rather than pesticides.

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