

## THE EFFECT OF ALUMINIUM ON THE STABILITY OF INTRACELLULAR MEMBRANES

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Aluminium is responsible for the ethiopathogenesis of many diseases. Although Al absorption in the alimentary tract is estimated to be below 1%, there are reports on aluminium accumulation in the tissues [1]. This accumulation is followed by a number of disturbances of the biochemical function of the cell. It has been suggested that Al interaction with cell membranes and the metal-binding sites of enzyme is involved in Al cytotoxicity [2].

To evaluate the influence of aluminium ions on intracellular membranes, the levels of dipeptidyl peptidase IV (E.C. 3.4.14.5) and microsomal alanylaminopeptidase (E.C. 3.4.11.2) in liver tissue were studied. The experiments were carried out on female Swiss mice which received 50 mg AlCl<sub>3</sub>/kg bw per day for 14 and 21 days. The activities of the enzymes in the microsomal and cytosol fractions were determined.

Exposure to aluminium induced an increase in dipeptidyl peptidase IV activity in the microsomal fraction. However, the activity of microsomal alanylaminopeptidase decreased significantly in the microsomal and cytosol fraction. Electron microscopy studies showed that aluminium affected the morphology of the endoplasmic reticulum. The most common response was a characteristic swelling of the endoplasmic reticulum membranes.

The results of this experiment suggest that aluminium caused biochemical and morphological changes in endoplasmic reticulum membranes in mouse liver tissue cells.

### REFERENCES

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