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The influence of native ribonucleases and their modified derivatives on the functional activity of rat peritoneal macrophages

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Abstract

The influence of native, hydrophobized and dimeric forms of ribonucleases (RNAse A and RNAse Bacillus intermedius) on the process of phagocytosis and fusion between lysosomes and phagosomes in rat macrophages has been studied. The effect of native RNAses depends on their concentration: comparatively low concentrations (0.5-50 μg ml-1) stimulate the phagocytosis and phagosome-lysosome fusion whereas high concentrations (above 75 μg ml -1) inhibit these processes. RNAses modified by surfactant oxanol-KD-6 and dimeric forms of RNAses possess only the inhibitory effect, which appears at concentration considerably lower than that of native enzymes. The stimulatory effect of native RNAses and the inhibitory effect of hydrophobized derivatives do not depend on the catalytic activity.

Keywords

Inhibition, Lysosome-phagosome fusion, Macrophage, RNAse