



## Estimation of the action of three different mechlorethamine doses on biochemical parameters during experimentally induced pleuritis in rats

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### Abstract:

Nitrogranulogen (NTG) may modify the character of inflammatory reactions. These modifications are a result of cytotoxic and mutagenic effects. NTG has high affinity to DNA and causes disorders in the synthesis of acute phase proteins (e.g., haptoglobin, transferrin, fibrinogen, and complement protein C3).

Our previous studies have shown that small doses of NTG can enhance immunological defense reactions in the organism. The aim of the current studies was to determine how different NTG doses cause changes in the values of biochemical parameters in pleuritis-induced rats. The animals were randomized into five groups: Group I – control group; Group II – IP (induced pleuritis) group; Group III – NTG5 group; Group IV – NTG50 group; Group V – NTG600 group. Blood was collected from all groups of animals at 24, 48, and 72 h after the initiation of the carrageenin-induced inflammatory reaction.

These investigations revealed that a dose of 5 µg NTG/kg b.w. (body weight) can change the character of the inflammation. Our studies also show that a dose of 600 µg NTG/kg b.w. causes a rapid decrease in the level of C3 at the 72 h of the experiment (after 3 applications every 24 h), which indicates a cytotoxic action of such a large NTG dose. NTG used at doses of 50 and 600 µg/kg b.w. causes the opposite metabolism of albumins and other serum proteins. Our studies show that the different doses of NTG have distinct effects on the inflammatory reaction.

### Key words:

mechlorethamine, nitrogranulogen, NTG, inflammatory reaction, pleuritis, biochemical parameters

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