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EFFECTS OF SOME DRUGS ON RAT ERYTHROCYTE 6-PHOSPHOGLUCONATE DEHYDROGENASE: AN *IN VITRO* AND *IN VIVO* STUDY

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The *in vitro* and *in vivo* effects of some drugs on rat erythrocytes 6-phosphogluconate dehydrogenase were investigated in this study. Rat erythrocyte 6-phosphogluconate dehydrogenase was partially purified with ammonium sulfate precipitation. The enzyme activity was determined by Beutler's method. Some drugs such as ampicillin, amikacin sulfate, and netilmicin sulfate inhibited the enzyme activity in *in vitro* conditions, while metamizole activated it. The I_{50} values of the inhibiting drugs were 66.2, 5.836, and 0.963 mM, respectively. For the drugs having low I_{50} values (drug concentrations which produce 50% inhibition) (amikacin sulfate and netilmicin sulfate), *in vivo* studies were performed in rats (Sprague-Dawley). Amikacin sulfate at 64 mg/kg inhibited the enzyme activity significantly ($p < 0.05$) 2 h after dosing. Netilmicin sulfate at 6.4 mg/kg also inhibited the enzyme significantly ($p < 0.05$) 4 h after dosing.

Amikacin sulfate and netilmicin sulfate inhibited rat erythrocyte 6-phospogluconate dehydrogenase both *in vivo* and *in vitro*. The enzyme was inhibited *in vitro* by ampicillin and activated *in vitro* by metamizole.

Key words: *6-phospogluconate dehydrogenase, erythrocytes, rat, drugs*

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