



INVESTIGATION OF POSSIBLE MUTAGENIC EFFECTS OF VARIOUS ATENALOL RAW MATERIALS AND ITS DEGRADATION PRODUCTS IN THE GASTRIC JUICE IN-VITRO

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One of the possible adverse effect of drugs and chemical is their mutagenic effect which may affect the future generations. This may be due to various impurities which may have been produced during the manufacturing process.

The present work was carried out to investigate the possible mutagenic effects of various brand of atenolol raw material marketed in Iran as well as its degradation products in the condition of gastric juice in-vitro.

we would like to provide answer to the following questions;

- 1- Do various brands of atenolol contain impurities, which may be mutagenic?
- 2- Does atenolol in the presence of nitrates degrade to some mutagenic metabolites in the condition of gastric juice?

Salmonella typhimurium strains (TA-98 & TA-100) in the standard conditions of Ames' test was used to detect possible mutagenic effect of these chemicals.

Our results showed that three brands of atenolol marketed in Iran do not contain any mutagenic impurities.

However, in the condition of gastric juice (acidic pH and temperature of 37 C) and in the presence of nitrate some mutagenic effect was observed.

it is concluded that atenolol might have changed to N-nitroso-atenolol in this conditions.

However, further work on the laboratory animals is needed to prove whether these degradation products could be absorbed in the in-vivo condition.