

POTENTIALITIES OF SOME SYNTHESIZED METALLIC COMPLEXES ON BIOGENIC AMINES FORMATION BY BACTERIA

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ABSTRACT

Meat, fish and cheese samples were collected and analyzed from microbiological point of view. Four bacterial isolates were selected according to their decarboxylase activities and identified as *E. cloacae* Chs₂, *E. aerogenes* CK₂, *E. aerogenes* CK₁, *B. pumilus* Chs₁. Four synthesized metallic complexes were tested against biogenic amines-producing bacteria. These complexes were [Cu(HMPyPT)₂ Cl₂ · 2 H₂O] · H₂O, [Au (HMPyPT)₃ Cl₃ · ETOH], [Zn(HMPyPT) Cl₂ (Py)₃] and [P + (HMPyPT)₂ Cl₄ · ETOH].

Obtained data showed different effectiveness of used metals on tested four bacterial strains. *In vitro* the bacterium *B. pumilus* showed to be more sensitive to examined complexes. Gold complex was more effective followed by copper complex, but zinc complex came last in its effect. Opposite results were found *in vivo* since copper complex was most effective. Obtained data showed that copper complex showed high inhibitory effect to the bacterium *B. pumilus in vivo*, in which the relative decrease in bacterial number was 93.9 compared to gold complex that was 61.5 after 24 hr incubation period at 30°C. It is also found that the relative increase in histamine was found to be 213.3 by gold complex after 24 hr incubation period at 30°C. Meanwhile, the relative increase of spermidine was found to be 83.9 and 92.4 by gold and copper complexes after 46 hr at 30°C, respectively. In addition, the fold increases of cadareine were 39.16, and 2 by gold and Copper complexes, respectively after 24 hr incubation at 30°C.