

BIOCHEMICAL STUDIES ON THE MECHANISM OF ACTION OF
SOME ANTIMICROBIALS

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شيرين فهمي توفيق علي

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ABBREVIATIONS

A°	:	Angstrom
A	:	Adenine
ATP	:	Adenosine Tri Phosphate
<i>B. S.</i>	:	<i>Bacillus subtilis</i>
C	:	Cytosine
EAC	:	Ehrlich Ascites Carcinoma
DMSO	:	Dimethyl sulphoxide
DNA	:	Deoxyribonucleic acid
<i>E. coli</i>	:	<i>Escherichia coli</i>
EDTA	:	Ethylene diamine tetra acetate.
G	:	Guanine
I. R.	:	Infrared
MIC	:	Minimum inhibitory concentration
mRNA	:	Messenger ribonucleic acid
NADPH	:	Reduced nicotinamide adenine dinucleotide phosphate
NAG	:	N- acetylglucosamine
NAM	:	N- acetylmuramic acid
ng	:	nanogram
nm	:	nanometer
O.D.	:	Optical density
r.p.m	:	revolution per minute
R _f	:	Relative mobility
RNA	:	Ribonucleic acid
<i>S. aureus</i>	:	<i>Staphylococcus aureus</i>
T	:	Thymine
TAE	:	Tris acetate EDTA
TCA	:	Trichloroacetic acid
T _m	:	Melting temperature
tRNA	:	Transfer ribonucleic acid
U. V.	:	Ultraviolet

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AIM OF THE WORK

The present study was carried out to search for new *nitrothiophene carboxaldehyde derivatives* that may possibly induce notable antimicrobial potentialities against broad-spectrum species, and to elucidate probable mechanisms through which the most potent synthetic compound exerts its action on the test organism.

The goal was achieved by exploring antimicrobial activities of the prepared synthetic compound, determination of physical and chemical properties, and studying the effects on the cell wall and the intracellular components on the sensitive microorganism. Moreover, antitumor activity of the selected antibiotic was within the plan of the present thesis.

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Effect of NTCAR on the Accumulation of N-Acetyl-glucoseamine in *B. Subtilis* Cells

From the results observed in figure (21*) it can be concluded that, the compound NTCAR arrested the synthesis of *B. s.* cell wall as indicated by the accumulation of N-acetylglucoseamine in the cytoplasm of treated cells. The higher concentration of the compound, the more pronounced was the effect at different periods of treatment. The percent of incensement of N-acetylglucoseamine reached to the maximum at 4MIC (111.47 %).

