

By
Athraa F. Khudhair Al-Lamy

(B.Sc. Chemistry) (2001)

*In partial Fulfillment of Requirements for The Degree of
Master of Science in Chemistry*

To the Department of Chemistry
College of Science
University of Basrah
Basrah- I raq

Supervisour

Prof. Ali Al-Mowali

Dr. Muhammed Al-Assadi

2007

Summary

This thesis is concerned with synthesis , characterization of some amino ruthenium (III) complexes , and study of biological activity against two types of germs (Escherichia coli and Staphylococcus aureus) . the study is also concerned with the reaction of ruthenium complexes with DNA .

The ruthenium complexes are prepared in this thesis by the reaction of molten ruthenium chloride with various amines including 7-chloro-4-hydroxy quinoline , 5-chloro indazole , 3-acetyl pyridine , 4-bromo isoquinoline , 8-hydroxy quinoline , 1,8 – diamino naphthalene and 1,10-phenanthroline . Identification of the product was carried out by using spectroscopic techniques .

The biological activity of the prepared complexes showed height tendency to inhibit bacteria as compared with free ligands . the study shows that the complexes have a great inhibition effect toward gram positive bacteria as compared with germ negative and this may be attributed to the limited amount of lipids composition in the cell of germ positive bacteria which enables the complexes to easily penetrate the cells .

Part of the thesis is concerned with the study of the interaction ruthenium complexes with DNA and it was found that these complexes some how interact with DNA . this fact was drawn from the change of absorption of U.V light with the concentration of the complexes added during specific time .