



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Sudan University of Science and Technology

College of Science – Laboratories Science

Department of Chemistry



***Validation of an analytical procedure for
Ciprofloxacin Tablet using ultra-violet
spectrophotometer***

Prepared by:

Sara Abdelmonem Mohamed

Rasha Mergani Altiak

Safa Mahdi Mohamed

Supervised by

Dr. Salah Ahmed Ibrahim

2016

الآية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى:

)

(109)

0*

((110))

صدق الله العظيم
الكهف: 109-110

DEDICATION

We dedicate our dissertation work to our family and many friends. Special feelings of gratitude to our loving parents whose words of encouragement and push us forward. Our sisters have never left our side and are very special. We also dedicate this dissertation to our friends and church family who have supported us throughout the process. We dedicate this work and give special thanks to our best friend.

Acknowledgement

- *Firstly and finally all praise is raised to our creator ALLAH for giving our ability, strength, power to complete this study.*
- *We greatly indebted to our supervisor: Dr. Salah Ahmed Ebrahim who has supervised and offered his directions, encouragement and gratitude goes to him for starting this work.*
- *We offer my deepest sense of gratitude to our parents for their support and encouragement during our academic career.*
- *We also thank our friend to being with us all steps of our study in this college and supporting me.*
- *We also thank every person help us, and our special thanks to: Azal and Ami pharma companies for helping us in our practical.*

Table of content

No	Title	Page
	Dedication	I
	Acknowledgment	II
	Table	IV
	CHAPTER ONE	
1.0	Introduction	1
1.1	Drug	1
1.1.1	Antibiotics	3
1.1.2	Ciprofloxacin	5
1.1.2.1	Medical use	5
1.1.2.2	Spectrum of activity	8
1.1.2.3	Bacterial resistance	8
1.1.2.4	Side Effects	9
1.2	Spectrophotometer	10
1.3	Chromatography	13
1.3.1	High-performance liquid chromatography	13
1.3	Analytical Method Development and Validation	13
1.3.1	Specificity	14
1.3.2	Linearity	15
1.3.3	Precision	15
1.3.4	Repeatability	15
1.3.5	Intermediate Precision	16
1.3.6	Reproducibility	16
1.3.7	Accuracy	16
1.3.8	Range	17
	CHAPTER TWO	
2.0	Experimental	18
2.1	Chemicals	18
2.2	Apparatus	18
2.3	Instruments	18

2.4	Procedure	19
2.4.1	Preparation of ciprofloxacin tablets for dissolution(USP)	19
2.4.2	Validation method	19
2.4.2.1	Standard solutions	19
2.4.2.2	Preparation of working standard	19
2.4.2.3	Preparation of assay working solution	19
2.4.2.4	System suitability test	20
2.4.2.5	Linearity	20
2.4.2.6	Statistical analysis and calculation formula used	21
2.4.2.7	Limit of detection	22
2.4.2.8	Limit of quantification	22
2.4.2.9	Specificity	27
2.4.2.10	Accuracy	28
2.4.2.11	Precision	28
2.4.3	Liquid chromatography conditions	31
2.4.4	Preparation of ciprofloxacin tablets for HPLC	31
	CHAPTER THREE	
3.0	Result	