

Contents

Title	Page No.
List of Figures.....	I
List of Tables.....	III
List of Abbreviations.....	IV
Introduction	1-3
Review of Literature	4-28
1. Virology Features.....	4
1.1. Taxonomy of HBV	4
1.2. Sources of Infection and Transmission.....	4
2. Pathogenesis of Hepatitis B.....	5
2.1. History of detection HBV.....	5
2.2. HBV Pathogenesis.....	6
3. Immune response Hepatitis B virus.....	9
4. HBV structure and replication	11
4. 1. Structure of HBV.....	11
4.2. HBV Replication.....	13
5. Distribution.....	14
6. Important of Mutation detection	15
6. 1. Mutation detection of surface antigen	18
6. 2. Mutation detection of core antigen	23
Materials and Methods	29-39
1. Materials	29
1.1. Sample collection.....	29
1.2. DNA Extraction.....	29
1.3. Amplification of target genes of HBV (surface antigen gene and core pre core region)	29
1.4. Detection of PCR Product.....	30
1.5. Recovery of PCR product from agarose gel.....	31
1.6. Sequencing of hepatitis B surface antigen and core antigen.....	31
1.7. Sequencing results and Bioinformatics.....	32

Contents (Cont...)

Title	Page No.
2. Methods	33
2.1. DNA Extraction.....	33
2.2. Amplification of target genes of HBV (Surface antigen and Core antigen)	34
2.3. Detection of PCR Product.....	35
2.4. Recovery of PCR product from agarose gel.....	35
2.5. Sequencing of hepatitis B surface antigen and core antigen.....	36
2.6. Sequencing results and Bioinformatics.....	38
Result	40-82
1. Amplification of extracted DNA samples using PCR.....	40
2. Nucleotide sequencing of Surface antigen and Core antigen	41
3. Bioinformatics analysis.....	46
3.1. Bioinformatics analysis of Surface antigen	47
3.1.1. Alignment Surface antigen with HBV/A-H reference..	47
3.1.2. Alignment of isolated Egyptian HBV 2010 with currently circulated HBV/D in Egypt of Surface antigen.....	57
3.2. Bioinformatics analysis of Core antigen	68
3.2.1. Alignment of pc/core region with HBV/A-H genotypes references.....	68
3.2.2. Alignment with currently circulating HBV/D in Egypt at Core antigen	75
Discussion	83-91
Conclusion	92-93
Recommendation	94
Summary	95-97
References	98-110
Arabic summary	—