# بسم الله الرحمن الرحيم


# شبكة المعلومات الجامعية

# التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأفلام قد أعدت دون أية تغيرات

## يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

**To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%**

# بعض الوثائق الاصلية تالفة

# بالرسالة صفحات

# لم ترد بالاصل

# HBV DNA BY QUALITATIVE AND QUANTITATIVE PCR MEASUREMENT IN CASE OF CHRONIC LIVER DISEASE AND HEPATOCELLULAR CARCINOMA

## Thesis

*SUBMITTED FOR PARTIAL FULFILLMENT OF MASTER DEGREE IN CLINICAL BIOCHEMISTRY*


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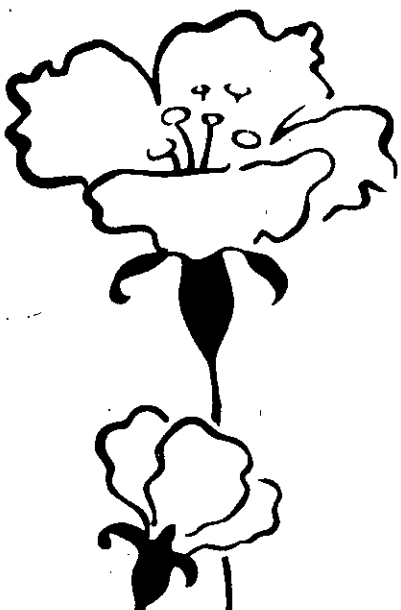
**FACULTY OF MEDICINE**
**MENOUFIYA UNIVERSITY**
**1999**

بسم الله
الرحمن الرحيم

قالوا سبحانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم

صدق الله العظيم

(٣٢/ البقرة)



*To ..*

- *My parents.*
- *My beloved wife and daughter: Mai*

# *LIST OF ABBREVIATIONS*

| | |
|---|---|
| 3SR | Self sustained sequence replication |
| AFP | Alpha fetoprotein |
| ALP | Alkaline phosphatase |
| ALT | Alanine aminotransferase |
| Anti-HBe | Hepatitis B e antibody |
| AST | Aspartate aminotransferase. |
| GGT | Gamma glutamyl transferase. |
| HBcAb | Hepatitis B core antibodies |
| HBcAg | Hepatitis B core antigen |
| HBeAg | Hepatitis B e antigen |
| HBsAb | Hepatitis B surface antibody |
| HBsAg | Hepatitis B surface antigen |
| HBV DNA PCR | Hepatitis B virus deoxyribonucleic acid by polymerase chain reaction. |
| HBV | Hepatitis B virus |
| HBV-DNA | Hepatitis B virus deoxyribonucleic acid |
| HCC | Hepatocellular carcinoma |
| PHCC | Primary hepatocellular carcinoma |
| SGOT | Serum glutamic oxaloacetic transaminase |
| SGPT | Serum glutamic pyruvic transamise |
| UDP | Uridine diphosphoglucuronate |

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# INTRODUCTION

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The hepatitis B virus (HBV), which was discovered in 1966, infects more than 350 million people worldwide (Purcell, 1993).

More than 250 million people throughout the world are estimated to be chronically infected with the hepatitis B virus which is the primary source of chronic hepatitis and liver cirrhosis in endemic areas (Beasley et al., 1981).

Chronic hepatitis B infection results in a spectrum of disease entities ranging from the most severe form of chronic active hepatitis to the asymptomatic carrier state (Hoofnagle et al., 1987).

The presence of hepatitis B virus surface antigen (HBsAg) in serum or plasma indicates hepatitis B virus (HBV) infection, but the detection of HBsAg does not provide information on the replicative activity of the virus. Traditionally, the secretory version of the HBV core protein, the e antigen (HBeAg) serves as a marker for active viral replication. In the treatment of chronic hepatitis B, the presence or absence of HBeAg is assumed to represent a high

or low replicative state of HBV respectively. However, precore mutant HBVs which do not produce HBeAg, irrespective of their rate of replication have been described (Carman and Thomas, 1992).

Hepatocellular carcinoma (HCC) is one of the most common cancers in the world, and HBsAg seropositive carriers have an up to 200-fold greater risk for developing HCC than non-carriers. Epidemiological studies have demonstrated that hepatitis B virus (HBV) infection is strongly correlated with the development of HCC (Tetsuro Urashima et al., 1997).

In chronic hepatitis B virus (HBV) infection, the replicative phase is identified by the presence of hepatitis B e antigen (HBeAg) in serum, while seroconversion to the homologous antibody (anti-HBe) is generally assumed to indicate transition to inactive infection. However, a number of anti-HBe positive patients have continuing activity of liver disease which have been related to persistent HBV replication when a positive HBV-DNA serum test is obtained (Hadziyannis et al., 1983 and Fattovich et al., 1988).

Loss of hepatitis B surface antigen (HBsAg) with appearance of antibodies to HBsAg (HBsAb) is generally

associated with a remission of chronic hepatitis B, accompanied by the normalization of serum aminotransferases levels and improvement of liver histologic lesion (Perillo and Brunt, 1991).

However, several studies have shown the persistence of hepatitis B virus (HBV) DNA sequences in the liver and serum in patients with chronic hepatitis B after loss of HBsAg (Marcellin et al., 1990).