



GENETIC STUDY IN BREAST CANCER IN AL-DIWANYLA CITY

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Dedication

We dedicate this research to our families who are tired on our upbringing and support us in every step . Also we dedicate this work to every one encourage us and believe us . We dedicate this work for everyone contribute in the development of the great country AL-Iraq and contribute on the safe of his people

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ABSTRACT

Breast cancer is the most distribution type among other cancers in the world. It uncontrolled growth and replication of breast cancer. It is mainly occurs because genetics and environmental factors . Mutation in BRCA1 &BRCA2 is the most important reason of breast cancer. 2012 breast cancer recored about 1.57 million cases in the world. Also in 2012 about 21.101 cases has been recorded. This study has been collected 20 samples of breast cancer from AL-Diwaniya hospital. The DNA is isolated and amplification used RAPD PCR then separation using gel electrophoresis.

INTRODUCTION

Breast cancer is the most popular type of cancer in women (1). Environmental and genetics factors raise the incidence of breast cancer by activation or inactivation of certain genes that leading to neoplastic transformations, or abnormal cell growth(2).Breast cancer comprises 10.4% of all cancer incidences among women in the world (3). It was recorded about 11,833 cases in women and 9,268 cases in men in 2012 in Iraq(4). While in Iraq during the period of 2000 to 2009 has raised in all ages specially the age group between 60-69,also affecting younger age groups than the developing countries (5). In 2008 breast cancer was mainly infect male in the age above 75 in Karbala (6). In west of Iraq breast cancer among females is low but it is relatively higher in younger age group compared to other studies (7). Kurdish rates of breast cancer reached to about 168.9 per 100.000 in the age from 55-59 years(8). A study in Kirkuk found that the age average of breast cancer is 47 years, and there is no single case before the age of 20, this study also revealed that breast cancer tend to be in younger age group it occurred in 61.7% in patients before the age of 50 years(9).

However breast cancer cases has shown to increasing in a rate of 1.14% each year (4). One reason of breast cancer is mutation in two genes (BRCA1 and BRCA2), the mutation of this genes is about 5% to 10% of all breast cancer states(10,11). Also the mutation of HER2 gene can cause breast cancer, this mutations in genes can be also used to diagnosis breast cancer (12). However, patients with personal and/or family history of breast cancer have specific predisposing genes in 30% of cases, about 25% of hereditary cases are because of mutation in one of identified rare genes but highly penetrant genes(BRCA1,BRCA2,PTEN,TP53,CDH1, and STK11),which confer up to an 80% lifetime risk of breast cancer(13). Immune system functional status may be related to cancer prognosis , cytokine release patterns from natural killer cell and T-cells are implicated in primary prevention and recurrence of breast cancer(14). Recently researches had demonstrated that immune relate factors have an importance in defining patient prognosis and their response to treatment, in addition immune system can suppress tumor growth by destroying cells or inhibiting their uncontrolled growth they also promotes tumor progression either by selecting for tumor cells that are more fit to survive in an immunocompetent host or by generat institution conditions with the tumor microenvironment that simplify tumor outgrowth(15). For the great importance of breast cancer , this work was

aimed to determine some genetic and ? features of patients with breast cancer in AL-Diwanyia city.

MATERIALS AND METHODS

EQUIPMENT	MANUFACTURED
Blood Genomic DNA Extraction Mini Kit (50 preps)	FAVORGEN BIOTECH CORP, Taiwan
Digital Water Bath	LabTech , Korea
Vortex mixer	Germmy Industrial Corp ,Taiwan
Micropipette	DRAGONMED, China
Refrigerated Micro Centrifuge	Labnet International INC, USA
Multigene Optimax Thermal Cycler (PCR)	Labnet International INC, USA
Mastermix	BIONEER, Korea
Balance/Scale	Sartorial, Germany
Hotplate Stirrer	LabTech, Korea
Electrophoresis Agarose	BIO BASIC INC, Canada
Ethidium Bromide Solution	Promega Madison, WI, USA
Multi Sub Electrophoresis System	Cleaver Scientific Ltd, Korea
UV Transilluminator	OPTIMA INC, Japan

THE GENOMIC DNA EXTRACTION KIT INCLUDE

MATERIAL	QUANTITY
FABG Buffer	15 ml
W1 Buffer	22 ml
Wash Buffer	10 ml
Elution Buffer	15 ml
Protenase K	11 mg
FABG Mini Column	50 psc
Collection Tube	100 psc
Elution Tube	50 psc

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To prepare gel

Material	Quantity
Agarose	0.9 gm
TBE buffer	100 ml
Ethedium Bromid	5 micro litter

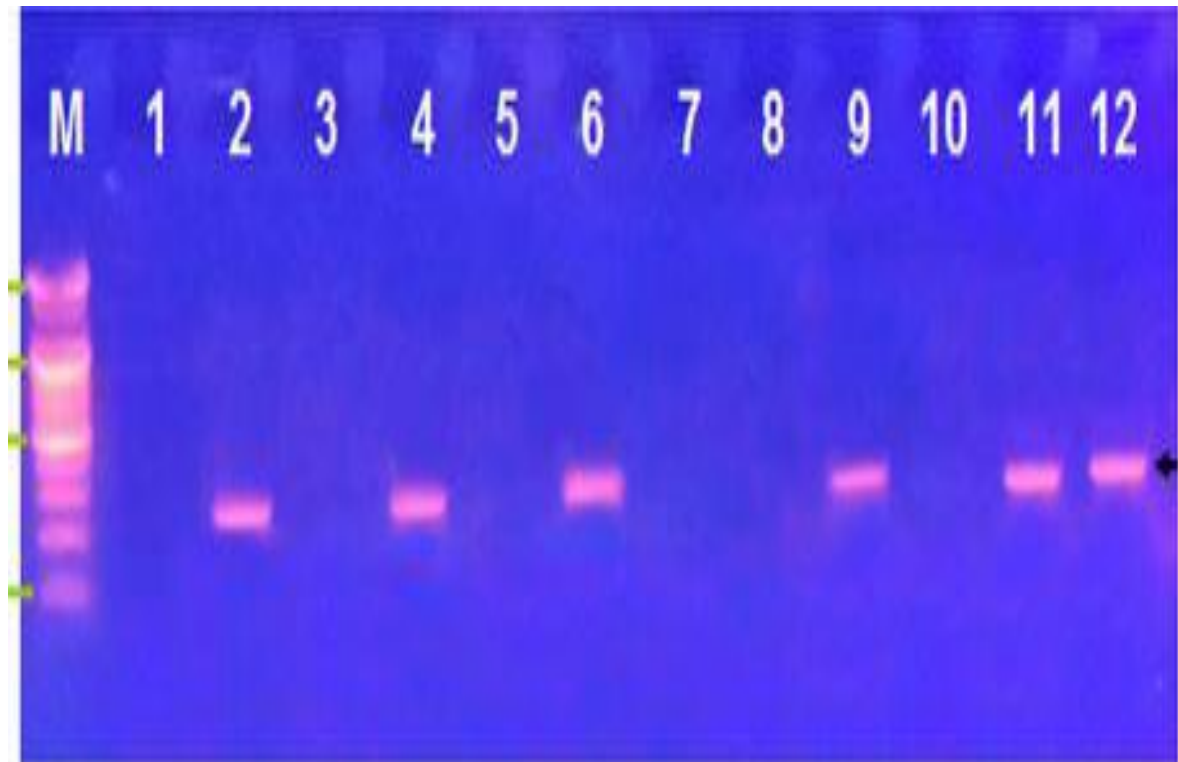
To prepare of 10X TBE stock solution

Material	Quantity
This base	108g
Boric acid	55g
EDTA 0.5M	40 ml

Steps of PCR

Step	Teprature	Time
Denaturation	94 C	30 min
Anealling	37 C	60 S
Extension	72 C	1 m

RESULT



DISCUSSION

Breast cancer is the most familiar type of cancer among women. Environmental and genetics factors are basic reason of breast cancer. It cause 1.010 deaths in women above 40 years old in US in 2015(16). The highst frequency cases have been recorded in 45-49(4). BRCA1 & BRCA2 are the most important genes linked with breast cancer, about 5-10% of incidence is due to the mutation in these gems(16).

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