

CERTAIN MOLECULAR BIOLOGICAL STUDIES IN PATIENTS WITH OVARIAN CANCER

Thesis

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Biochemistry

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Abbreviations

- AdoMet**: adenosylmethionine.
- AKT ̳**: Act thymoma Transferring retrovirus.
- ALL**: Acute Lymphoblastic leukemia.
- AML**: Acute myelogenous leukemia.
- APAF**: Apoptotic protease activating factor.
- APC**: Adenomatous polyposis coli.
- Apo E**: Apolipoprotein E.
- AzaC**: ̳- azacytidine.
- ̳-**Aza-CdR**: ̳-aza-̳-deoxycytidine.
- bcl-̳**: B-cell leukaemia/lymphoma-̳.
- bp**: base pair.
- BRAF**: v-raf murine sarcoma viral oncogene homolog B ̳).
- BRCA-1**: Breast cancer gene-1).
- BRCA-2**: Breast cancer gene-2).
- CA 125**: Carbohydrate Antigen 125.
- CA ̳4/61**: Carbohydrate Antigen ̳4/61).
- CA 15-3**: Carbohydrate Antigen 15-3).
- CA 19-9**: Carbohydrate Antigen 19-9).
- CASA**: Cancer-associated serum antigen .
- CDKI**: Cyclin-dependent kinase inhibitor.
- C-erb-B2**: Cellular oncogene of avian erythroblastosis.
- CEA**: Carcinoembryonic antigen.

- CpG**: Cytosine phospho Guanine.
- C-fms**: Cellular oncogene of feline sarcoma virus.
- C-myc**: Cellular oncogene of myelocytoma virus.
- DAP**: death associated protein.
- DCC**: Deleted in colon cancer.
- DNAM**: DNA Methyl transferase.
- dNTPS**: deoxy nucleotides triphosphate.
- EDTA**: Ethylene diamine tetra acetic acid.
- EGFR**: Epidermal growth factor receptor.
- ERK**: Extracellular regulated kinase.
- EOC**: Epithelial ovarian carcinoma.
- FIGO**: Federation Internationale de Gynecologie et d'Obstetrique.
- FSH**: Follicle stimulating hormone.
- HER γ / neu**: human epidermal growth factor receptor γ .
- HMFG γ** : Human milk fat globulin .
- HLA-G**: Human Leucocytic Antigen-G.
- HNPCC**: Human non polyposis coli cancer.
- hMLH λ** : human mutL homologue λ .
- hMSH γ** : human mutS homologue γ .
- hPMS λ** : human PMS homologue λ gene.
- **hPMS γ** : human PMS homologue γ gene.
- ICF syndrome**: Immune deficiency, centromeric instability and facial anomalies syndrome.
- IGF** : Insulin growth factor .
- Kb**: kilo base.

- k Dal** : kilo dalton.
- KLK**: human kallikrein gene family.
- K- RAS**: Kristen Rat Sarcoma.
- LASA**: Lipid-associated sialic acid.
- LH**: Luteinizing hormone.
- LMP**: Low malignant potential.
- LOH**: loss of heterozygosity.
- LOI**: Loss of imprinting.
- MAGE**: Melanoma Antigen - Encoding Gene Family.
- m Amperes**: milli amperes.
- MAPK**: Mitogen activated protein kinase.
- MAT**: Methionine adenosyltransferase.
- o-mCyt**: o-methyl cytosine.
- M-CSF**: Macrophage colony-stimulating factor.
- MDBP**: Methylated DNA binding protein.
- MeCP**: Methylated cytosine binding protein.
- MEIA**: Micro particle Enzyme Immunoassay.
- MEK**: Mitogen activated ERK activating kinase.
- MGMT**: O⁶-methylguanine-DNA methyltransferase
- m M**: milli Molar.
- **m Mol**: milli Mole.
- MMR**: Mismatch repair.
- MPSCS**: Micropapillary Serous Cystadenocarcinomas.
- MSI**: Microsatellite instability .
- MSP**: Methylation-specific PCR.

- MeTase**: Methyltransferase.
- MTHFR**: Methylene tetrahydrofolate reductase.
- NF- λ** : Neurofibromatosis type λ .
- NF- ν** : Neurofibromatosis type ν .
- nm**: nano meter.
- OSA**: Ovarian serum antigen.
- OVX λ** : Ovarian cancer X- λ , A Surface Antigen on human ovarian cancer cells.
- p λ ^{INK ϵ A}**: Protein λ (Cyclin dependant kinase inhibitor).
- p λ ^o**: Protein of molecular weight λ ^o k Dal.
- p λ ^{o ν}** : Protein of molecular weight λ ^{o ν} k Dal.
- p λ ^{ν}** : Protein of molecular weight λ ^{ν} k Dal.
- PCR**: Polymerase chain reaction.
- PLAP**: Placental alkaline phosphatase .
- PLCO trial**: The Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial.
- PCOS**: Polycystic ovary syndrome.
- PTEN**: phosphatase and tensin homologue.
- RAR β** : Retinoic acid receptor β .
- Rb**: Retinoblastoma protein.
- SAM**: S-Adenosyl methionine.
- SDS**: Sodium dodecyl sulphate.
- Sp- λ** : specificity protein- λ , transcription factor.
- SSs- λ** : Spiroplasma sp. Strain λ .
- TAG - λ ^{ν}** : Tumor-associated glycoprotein λ ^{ν} .

- TBE**: Tris borate EDTA.
- TDG**: Thymine DNA glycosylase.
- TGF- β** : Transforming growth factor β .
- TIMP- α** : Tissue inhibitor metalloproteinase - α .
- Tris - HCl**: Tris Hydrochloric acid.
- TSG**: Tumor suppressor gene.
- TVUs**: Transvaginal ultrasonography.
- UDG**: Uracil DNA glycosylase.
- UGF**: Urinary gonadotropin fragment .
- WT- λ** : Wilms tumour- λ .
- VHL**: Von hippel landau.

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Introduction:

In Egypt, ovarian cancer constitutes 36,49% of all gynecologic malignancies among females at the mean age of 47 years (**El-Bolkainy, 1991**).

In the United States, ovarian cancer is the leading cause of death from gynecological malignancies and it is the fifth most common female malignancy (**American Cancer Society, 1998**).

Unfortunately the majority of cases are diagnosed with advanced epithelial ovarian cancer with spread throughout the abdomen. Serum CA 125 may give significant prognostic information in epithelial ovarian cancer (**Kudoh et al., 1999**).

Genetic alterations including mutations of tumor suppressor genes and activation of oncogenes have been frequently found in ovarian cancer (**Berchuck et al., 1992**).

Abnormal methylation of genes involved in cellular transformation has been linked to the transcriptional inactivation by both correlative data and various experimental studies (**Baylin et al., 1998**).

Hypermethylation of p¹⁶^{Ink4A} tumor suppressor gene CpG island has been implicated as an important mechanism of gene inactivation along with non epigenetic alterations in diverse types of cancers (**Herman et al., 1995**).