



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



HANAA ALY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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**Evaluation of plasma M2-Pyruvate Kinase
as a novel biomarker in the differentiation
between Functional and Organic
Colonic Disorders**

Thesis

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

لسبحناك لا علم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدقة الله العظيم

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List of Abbreviations

Abbr.	Full-term
5-ASAs	: 5-Aminosalicylates
5-FU	: 5-Fluorouracil
6-MP	: 6-Mercaptopurine
ACG	: American College of Gastroenterology
ACR	: American College of Radiology
ACS	: American Cancer Society
ADP	: Adenosine diphosphate
AFAP	: Attenuated familial adenomatous polyposis
AFP	: Alpha-fetoprotein
AGA	: American Gastroenterology Association
AJCC	: American Joint Commission on Cancer
ALT	: Alanine aminotransferase
ANCA	: Antineutrophil cytoplasmic antibodies
Anti-TNF	: Anti-tumor necrosis factor
APC	: Adenomatous polyposis coli
ASCA	: Anti-Saccharomyces cerevisiae antibodies
AST	: Aspartate aminotransferase
ATP	: Adenosine triphosphate
AUC	: Area under the curve
AZA	: Azathioprine
BSFS	: Bristol Stool Form Scale
BSG	: British Society of Gastroenterology
CA19-9	: Carbohydrate antigen 19-9
CBC	: Complete blood count
CD	: Crohn's disease
CEA	: Carcinoembryonic antigen
CI	: Confidence interval
CIMP	: CpG island methylator phenotype
CRC	: Colorectal cancer
CRP	: C-reactive protein
CT	: Computed tomography

CTC	: Computed tomographic colonography
cTNM	: Clinical tumor-node-metastasis staging
DALM	: Dysplastic associated lesion mass
DCBE	: Double contrast barium enema
DK	: Dermokine
DKK-3	: Dickkopf-3
DNA	: Deoxyribo-nucleic acid
ECM	: Extra-intestinal manifestations
EDTA	: Ethylenediamine tetra-acetic acid
EGFR	: Epidermal growth factor receptor
ELISA	: Enzyme-linked immunosorbent assay
EMR	: Endoscopic Mucosal Resection
ESD	: Endoscopic Sub mucosal Dissection
ESR	: Erythrocyte sedimentation rate
FAP	: Familial adenomatous polyposis
FBD	: Functional bowel disorders
FBP	: Fructose 1,6-bisphosphate
FBS	: Fasting blood sugar
FCCX	: Familial colorectal cancer type X
FDA	: Food and Drug Administration
FIT	: Fecal immunochemical test
FSIG	: Flexible sigmoidoscopy
FUC	: α Fucosidase
GAL	: β Dgalactosidase
gFOBT	: guaiac-based fecal occult blood test
GIT	: Gastrointestinal tract
GMA	: Granulocyte monocyte apheresis
H & E	: Haematoxylin & Eosin
Hb	: Haemoglobin
HEX	: N-acetyl β Dhexosaminidase
HEX A	: N-acetyl β Dhexosaminidase isoenzymes A
HEX B	: N-acetyl β Dhexosaminidase isoenzymes B
HIF-1	: Hypoxic inducing factor 1
HNPCC	: Hereditary nonpolyposis colorectal cancer
HP	: Hyperplastic polyps
HPS	: Hamartomatous polyposis syndromes

HRAs	: High-risk adenomas
HRP	: Horseradish Peroxidase
IBD	: Inflammatory bowel disease
IBS	: Irritable bowel syndrome
IBS-C	: Irritable bowel syndrome with predominant constipation
IBS-D	: Irritable bowel syndrome with predominant diarrhea
IBS-M	: Irritable bowel syndrome with mixed bowel habits
IBS-U	: Irritable bowel syndrome unclassified
IGFBP-2	: Insulin like growth factor binding protein 2
INR	: International normalized ratio
IQR	: Inter-quartile range
JPS	: Juvenile polyposis syndrome
LDHA	: Lactate dehydrogenase A
lncRNA	: Long non-coding RNA
LRAs	: Low-risk adenomas
M	: Metastasis
M1-PK	: M1-pyruvate kinase isoform
M2-PK	: M2-pyruvate kinase isoform
MAN	: Amannosidase
MAP	: MUTYH-associated polyposis
miRNA	: MicroRNA
MMR	: Mismatch repair
MRI	: Magnetic resonance imaging
mRNA	: Messenger RNA
mTOR	: Mammalian target of rapamycin
MUTYH	: MUTY homolog gene
N	: Lymph node metastasis
NCCN	: National Comprehensive Cancer Network
NMCD	: Non-malignant colorectal disease
NPV	: Negative predictive value
NSAIDs	: Non-steroidal anti-inflammatory drugs
NTIMP-1	: N-methyltransferase and tissue inhibitor of metalloproteinases-1
OD	: Optical density

PAB	: Pancreatic autoantibodies
PDK-1	: Pyruvate dehydrogenase kinase 1
PEP	: Phosphoenol pyruvate
PET	: Positron emission tomography
PHD-3	: Prolyl hydroxylase 3
PHTS	: PTEN-hamartoma tumor syndromes
PI3K	: Phosphatidylinositol 3 kinase
PJS	: Peutz-Jeghers syndrome
PKL	: Pyruvate kinase isoform in the liver
PKR	: Pyruvate kinase isoform in the red blood cells
PLT	: Platelets
PPV	: Positive predictive value
ProTa	: Phosphorylate prothymosin
PSC	: Primary sclerosing cholangitis
PSL	: Prednisolone
PTEN	: Phosphatase and tensin homolog
pTNM	: Pathological tumor- node- metastasis stage
R	: Correlation coefficient
RNA	: Ribonucleic acid
ROC	: Receiver operating characteristic
RTK	: Receptor tyrosine kinase
SAPS	: Salazosulfapyridine
SD	: Standard deviation
sDNA	: Stool DNA
SOCS-3	: Suppressor of cytokine signaling 3
SPS	: Serrated polyposis syndrome
SPSS	: Statistical Package for Social Science
SSA/P	: Sessile serrated adenoma/polyps
STK	: Serine-threonine kinase
T	: Tumor depth of invasion
TAG72	: Tumor associated glycoprotein 72
TGF-β	: Transforming growth factor beta
TMB	: Tetramethylbenzidine
TNM	: Tumor-lymph node-metastasis
TPS	: Tissue polypeptide specific antigen
TSA/P	: Traditional serrated adenomas/polyps

UC	: Ulcerative colitis
US	: United State
USMSTF	: United State Multi-Society Task Force
USPSTF	: United State Preventive Services Task Force
VEGF	: Vascular endothelial growth factor
WBC	: White blood cell count
WHO	: World health organization

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