بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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The Implication of Autoantibodies in Early Diagnosis and Monitoring of Plasmonic Photothermal Therapy in the Treatment of Feline Mammary Carcinoma

A Thesis Presented by

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For

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Abstract

Plasmonic Photothermal Therapy (PPTT) is consider an effective localized treatment for pet's mammary carcinoma with a systemic effect. Its systemic effect has not investigated yet and need many studies to hypothesis how the PPTT eradicate tumor cells. In this study, for the first time, we detected (P53, PCNA, MUC-1, and C-MYC) autoantibodies (AAbs) in feline, studied the relationship between PCNA AAbs and mammary tumors, and investigated the effect of PPTT on humoral immune response of cats with mammary carcinoma through detection of AAbs level before, during, and after the treatment. Firstly, a panel of four AAbs (P53, PCNA, MUC-1, and C-MYC) was evaluated in serum of normal cats and cats clinically diagnosed with mammary tumors using Enzyme-Linked Immunosorbent Assay (ELISA). The panel showed 100% specificity and 93.7% sensitivity to mammary tumors ($p < 0.05$). Secondary, the

panel was evaluated in PPTT monotherapy, mastectomy monotherapy, and combination therapy. PPTT monotherapy decreased AAbs level significantly ($p < 0.05$) while mastectomy monotherapy and combination therapy had no significant effect ($p > 0.05$) on AAbs level. The cats treated with PPTT monotherapy showed high survival rate (530 ± 0.0 d; $n = 9$; 67% censored).

Dedication

To My Late Father,

To My Dear Mother,

To My Brother and Sisters.

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List of Abbreviations

AAbs	Autoantibodies
AuNRs	Gold Nano Rods
AUC	Area Under the Curve
BC	Breast Cancer
BRCA	Breast Cancer Antigen
CA15.3	Cancer Antigen 15.3
ECM	Extra Cellular Matrix
FMT	Feline Mammary Tumor
HBC	Human breast carcinoma
HER2	Human Epidermal Receptors
HSP	Heat Shock Proteins
ICD	Immunogenic Cell Death
IGFBP-2	insulin-like growth factor binding protein 2
NIR	Near Infra-Red
NY-ESO-1	Cancer testis antigens
PCNA	Proliferating cell nuclear antigen antibodies
PPTT	Plasmonic Photo Thermal Therapy
ROC	Receiver Operating Characteristic
TAAs	Tumor Associated Antigens
TOPO2α	Topoisomerase II alpha