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شبكة المعلومات الجامعية

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التوثيق الالكتروني والميكروفيلم

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Cairo University
Faculty of Veterinary medicine
Department of Microbiology

Preparation of Recombinant HER2 (Epidermal Growth Factor) Antigen

A thesis presented by

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(Microbiology)

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Abstract

Breast cancer is a major worldwide problem that affects humans and animals as well. Breast cancer is considered a major malignancy and one of the most common cancers together with lung and colon cancer. Therapeutic backbones for breast cancer include surgery, chemotherapy, radiation,

targeted therapy, and immunotherapy. However, these approaches have their limitations and continuous research is undergoing to produce a more effective treatment for metastatic breast cancer. A promising recent approach is directed to the production of specific nanobodies against HER2 instead of monoclonal antibodies. HER2 is an important prognostic marker and therapeutic target for breast cancer and other tumors. A synthesized *HER2* gene (3738 bp) cloned into PUC57 plasmid was obtained from Biomatik incorporation (USA). This fragment was isolated as a PCR amplicon using specific primers and high fidelity polymerase enzyme. Recombinant HER2 protein was prepared by cloning this synthesized *HER2* gene into a pET expression vector and its production in *E. coli* BL21 bacterial host cells. The produced recombinant protein was confirmed by SDS-PAGE and western blot using nickel histidine detector conjugate. From the current study, we concluded that recombinant HER2 protein production can be produced efficiently and will be used for further diagnostic and therapeutic purposes.

Dedication

To My Father

To my Mother.

To my brother, sister and friends.

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Contents

Chapter	Title	Page
1.	Introduction	1
2.	Review of literature	5
2.1	Overview of breast cancer	6
2.2	The diagnosis of breast cancer	10
2.3	Therapeutic strategies for breast cancer	11
2.4	Overview of the HER2 receptor	13
2.5	Role of HER2 receptor in normal and cancerous tissues	14
2.6	Canines as an important model for comparative oncology to humans	15
2.7	HER2 as a prognostic and predictive marker	16
2.8	Targeting HER2 receptor as an important therapeutic target to breast cancer in humans and animals	17
2.9	Limitations of existing therapy and the need for recent therapeutic approaches targeting HER2	18
2.10	Preparation of recombinant canine HER2 antigen	19

3	**Published paper**	**21**
	Comparative Evaluation of Heat Shock and Electroporation Transformation of Canine Homlogue of HER2 Gene Cloned in a PUC57 Plasmid Construct	
4.	**Discussion**	**40**
5.	**Conclusion**	**47**
6.	**Summary**	**49**
7.	**References**	**52**
8.	**Appendix**	**69**
9.	**الملخص**	**1**

List of tables

Table number	Title	Page number
1	Forward and reverse specific primers of HER2 DNA sequence with restriction sites of *Pst*I and *Not*I added to forward and reverse primers respectively.	75
2	Different amino acids and their concentrations in recombinant HER2 protein.	81

List of figures

Figure number	Figure name	Page number
1	The HER2 DNA sequence map (accession number EU239091) gene construct in PUC57 cloning plasmid using Snap Gene software	74
2	pET plasmid with N-terminal histidine tag 5754 bp (Clontech, Japan)	74
3	Gel electrophoresis containing 0.7% agarose concentration against Serva 1Kb ladder showing A-PCR product 3738bp B-linearized pET vector 5754bp digested by *Pst*I and *Not*I, C- linearized HER2-pET plasmid 9492bp	80
4	SDS polyacrylamide gel electrophoresis for recombinant HER2 protein showing 1-Non induced BL21 cells. 2-induced Bl21 cells for two hours. 3-induced Bl21 cells for three hours. 4-induced BL21 cells for four hours. 5, 6-purified recombinant proteins	81
5	Western blot of purified recombinant protein on nitrocellulose membrane 0.45µm using KPL His detector ™ western blot kit	82
6	Multiple cloning site (MCS) of pET expression vector N-terminal (Clontech, Japan)	84
7	Recombinant plasmid pET-HER2 using SnapGene software showing restriction sites of *Pst*I, *Not*I	84