CLONING AND CHARACTERIZATION OF AZURIN GENE FROM *PSEUDOMONAS AERUGINOSA*

A Thesis

Presented to

Cairo University

By

Howayada Mahany Mostafa

M. Sc. in Biochemistry

Faculty of Science, Cairo University, 2007

For

The Degree of Philosophy Doctorate (Ph.D. in Chemistry)

(Bio Chemistry)

2009

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Supervised by

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APPROVAL SHEET FOR SUBMISSION

Title of the Ph.D. Thesis:

Cloning and characterization of azurin gene from *Pseudomonas aeruginosa*

Name of Candidate: **Howayada Mahany Mostafa**

The thesis has been approved for submission by the supervisors:

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Signature: Mervat El-Sayed

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Faculty of Science - Cairo University

ABSTRACT

Name : Howayada Mahany Mostafa

Title of thesis: Cloning and characterization of azurin gene from *Pseudomonas aeruginosa*.

Degree : Ph.D. degree in science.

This work has been carried out to investigate the cloning and characterization of azurin gene, *Pseudomonas aeruginosa* was isolated and identified which produce azurin gene. Azurin was cloned in pEM®-T easy vector, Then the gene was subcloned into the *E. coli* overexpression vector pET-28a. The SDS PAGE analysis showed that the gene was overexpressed in *E. coli* The recombinant protein was purified by one-step purification using Ni^{++} resin. The antitumor effect of azurin was examined and detected by enters different cancer cells selectively, but not in any of the normal cell tested. This recombinant protein could potentially be used as a vehicle for cancer-targeted chemotherapy

Key words: *Pseudomonas aeruginosa,* azurin gene, cloning in *E.coli* .

Supervisors:

Assistant prof. Dr: Mervat El sayed Mervat El Sayed

Dr: Said Abdel Fattah Said Taha

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