

**“The possible protective or curative role of protein
isolated from seeds of *Peganum harmala* plant
against carbon tetrachloride induced toxicity in male
albino rats”**

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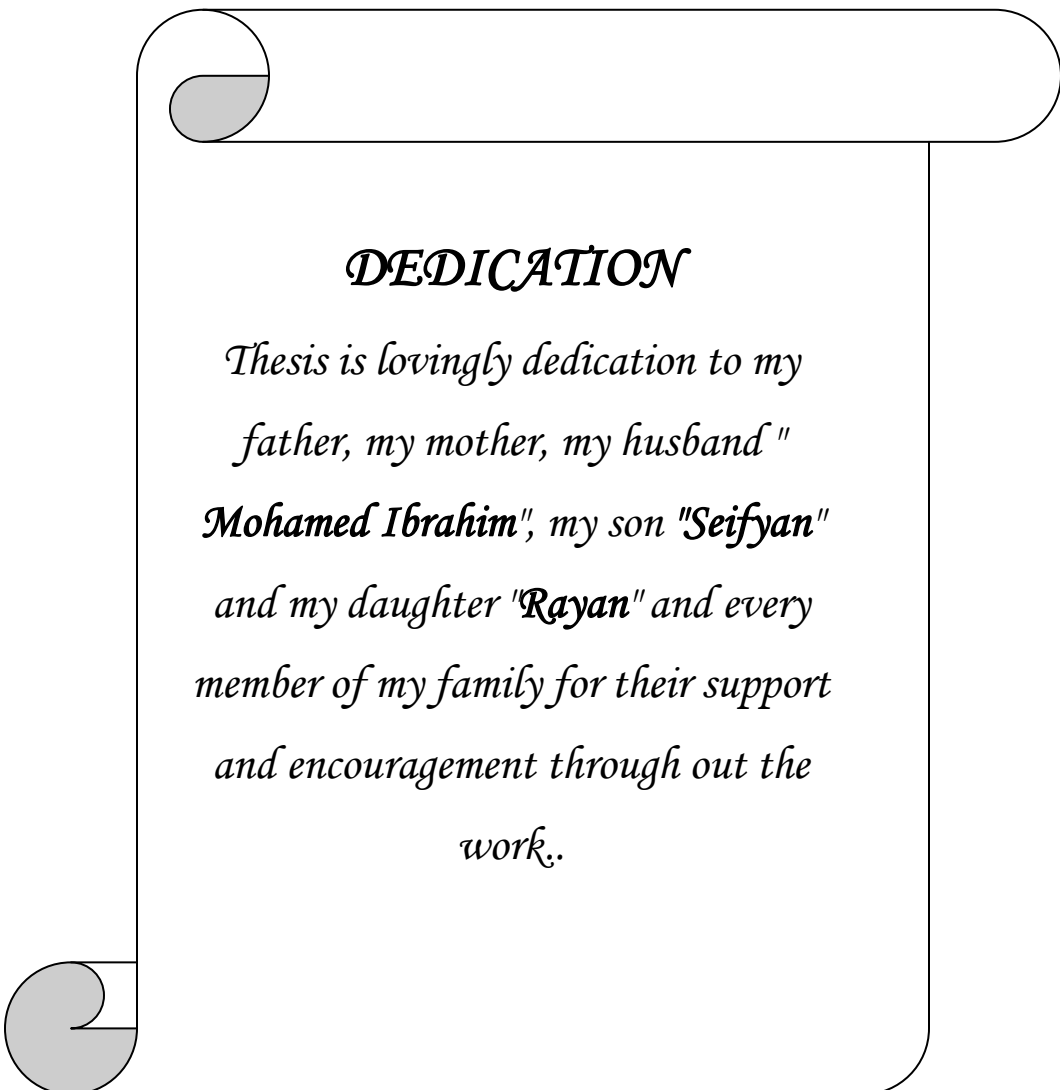
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DEDICATION

*This is lovingly dedication to my
father, my mother, my husband "
Mohamed Ibrahim", my son "**Seifyan**"
and my daughter "**Rayan**" and every
member of my family for their support
and encouragement through out the
work.*

Abstract

The present study was conducted to determine the protective and curative roles of the purified protein from seeds of *Peganum harmala* plant against carbon tetrachloride induced toxicity in mal albino rats. The purification steps included ammonium sulphate fractionation, chromatography on DEAE-cellulose, CM-sepharose (CL-B6) and superdex 75 columns. The molecular mass of purified protein was 132 KDa by gel filtration on sephadex G-100 column with two subunits each diamer composed of 30.199 KDa and 38.018 KDa by SDS-polyacrylamide gel electrophoresis. The dose-dependent effect of the purified protein at different doses (0.5, 1, 2, 4, 8 mg / kg b.wt) prior to CCl₄ administration was found to be at the two doses (4 and 8 mg/kg b.wt) as assessed by their effects on serum alanine aminotransferase (ALT) activity. Antioxidant activity of the purified protein was determined *in vitro* using 1,1-Diphenyl -2-picrylhydrazyl (DPPH) radical test. Administration of CCl₄ significantly increased in serum activities of ALT, AST, ALP and serum levels of lipid profile parameters, urea, BUN, creatinine and uric acid and malondialdehyde level in liver and kidney tissues was found significantly increased subsequent to CCl₄ administration. Significant decrease in serum total protein, and SOD, CAT and GSH activities in liver and kidney tissues was observed after CCl₄ administration. While, treatment with the purified protein from seeds of *Peganum harmala* plant at the two selected doses either pre- or post-CCl₄ administration significantly altered the deteriorating damage induced by CCl₄ toxicity to almost normal range which were nearly similar to that of vitamin C group. These results suggest that the purified protein from seeds of *Peganum harmala* plant possesses both protective and curative role against CCl₄ induced toxicity and probably acts by an anti-oxidative defences' mechanism through free radical scavenging activity which may be due to presence of hydrophobic, antioxidant, sulphur and aromatic amino acids.

Key words: *Peganum harmala* plant, Carbon tetrachloride (CCl₄), isolated protein, hepatic and renal toxicities, biochemical and oxidative stress parameters.

Contents	Page
1- Introduction	1
2- Materials and Methods	19
I- Plant material	19
II- Experimental animals	19
III- Chemicals.....	19
IV-Methods for extraction and purification of antioxidant protein.	19
1- Preparation of plant extraction buffer.....	19
2. Preparation of crude extract.....	20
3. Ammonium sulphate fractionation.....	20
4. Determination of free radical scavenging activity of protein fractions.....	21
5. Chromatographic separations.....	22
5.1. Ion exchange chromatography	22
5.1.1- By using diethylaminoethyl-cellulose(DEAE-cellulose) column.	22
5.1.2- By using CM-sepharose (CL B6) column	22
5.2. Gel- filtration chromatography.....	23
6. Determination of molecular mass.....	23
6.1- By using gel- filtration.....	23
6.2-By SDS-polyacrylamid gel electrophoresis (SDS-PAGE)	24
7. Analysis of amino acid composition.....	28
V- Determination of <i>in vitro</i> antioxidant activity of the purified protein.....	28
VI- Determination of dose-dependent effect of the purified protein.....	28
VII- Experimental design	28
VIII- Methods and techniques	30

1- Biochemical analysis of serum	31
1.1. Determination of serum aminotransferase enzymes (ALT& AST).....	31
1.2. Determination of serum alkaline phosphatase (ALP)	32
1.3. Determination of serum total protein.....	34
1.4. Determination of serum total lipids	35
1.5. Determination of serum triglycerides	36
1.6. Determination of serum total cholesterol	38
1.7. Determination of serum HDL-cholesterol	39
1.8. Determination of serum LDL-cholesterol	41
1.9. Determination of serum urea.....	43
1.10. Determination of blood urea nitrogen (BUN).....	44
1.11. Determination of serum creatinine.....	44
1.12. Determination of serum uric acid	45
2- Determination of oxidative stress parameters in liver and kidney tissues	48
2.1. Estimation of superoxide dismutase (SOD)	48
2.2. Estimation of catalase (CAT)	50
2.3. Estimation of reduced glutathione (GSH)	51
2.4. Estimation of lipid peroxidation (malondialdehyde) (MDA)	52
3 - Histological technique	54
VX - Statistical analysis	54
3- Results	55
1. Extraction and purification of antioxidant protein.....	55
1.1. Preparation of crude extract	55
1.2. Ammonium sulphate fractionation.....	55
1.3. Chromatography separations.....	58

1.3.1. Chromatography on DEAE-cellulose column.....	58
1.3.2. Chromatography on CM-sepharose (CL-B6) column.....	58
1.3.3. Chromatography on superdex 75 column.....	59
2. Molecular mass of the purified protein from seeds of <i>Peganum harmala</i> plant	63
2.1. Using gel- filtration technique.....	63
2.2. Using sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE)	63
3. Amino acid analysis of the purified protein.....	66
4. <i>In vitro</i> antioxidant activity of the purified protein	68
5. Dose-dependent effect of the purified protein	69
A. Pre-treatment groups.....	70
A.1. Serum biochemical parameters	70
A.1.1. Serum alanine aminotransferase (ALT).....	70
A.1.2. Serum aspartate aminotransferase (AST).....	70
A.1.3. Serum alkaline phosphatase (ALP).....	73
A.1.4. Serum total protein.....	73
A.1.5. Serum total lipids.....	76
A.1.6. Serum triglycerides	76
A.1.7. Serum total cholesterol.....	78
A.1.8. Serum HDL-cholesterol.....	78
A.1.9. Serum LDL-cholesterol	80
A.1.10. Serum urea.....	80
A.1.11. Blood urea nitrogen (BUN).....	83
A.1.12. Serum creatinine.....	83
A.1.13. Serum uric acid.....	85
A.2. Oxidative stress parameters in liver and kidney tissues	87

A.2.1. Superoxide dismutase (SOD).....	87
A.2.2. Catalase (CAT).....	87
A.2.3. Reduced glutathione (GSH).....	90
A.2.4. Lipid peroxidation (Malondialdehyde MDA).....	90
A.3. Histological observation.....	93
A.3.1. The liver	93
A.3.2. The kidney	99
B. Post- treatment groups.....	105
B.1. Serum biochemical parameters.....	105
B.1.1. Serum alanine aminotransferase (ALT)	105
B.1.2. Serum aspartate aminotransferase (AST)	105
B.1.3. Serum alkaline phosphatase (ALP).....	108
B.1.4. Serum total protein.....	108
B.1.5. Serum total lipids.....	111
B.1.6. Serum triglycerides	111
B.1.7. Serum total cholesterol.....	113
B.1.8. Serum HDL-cholesterol.....	113
B.1.9. Serum LDL-cholesterol	115
B.1.10. Serum urea	115
B.1.11. Serum blood urea nitrogen (BUN)	118
B.1.12. Serum creatinine.....	118
B.1.13. Serum uric acid.....	120
B.2. Oxidative stress parameters in liver and kidney tissues	122
B.2.1. Superoxide dismutase (SOD).....	123
B.2.2. Catalase (CAT).....	123
B.2.3. Reduced glutathione (GSH).....	125
B.2.4. lipid peroxidation (Malondialdehyde MDA).....	125
B.3. Histological observations.....	128
B.3.1. The liver.....	128

B.3.2. The Kidney.....	134
4- Discussion.....	138
5- Summary.....	179
6- References.....	186
7- Arabic summary.....	219

List of Tables

Table No.		Page
1	Purification steps of protein isolated from seeds of <i>Peganum harmala</i> plant.....	56
2	Amino acid composition of the purified protein from seeds of <i>Peganum harmala</i> plant.....	67
3	Effect of the purified protein from seeds of <i>Peganum harmala</i> pretreatment on serum ALT, AST and ALP enzyme activities of rats against CCl ₄ induced toxicity.....	71
4	Effect of the purified protein from seeds of <i>Peganum harmala</i> pretreatment on serum total protein and lipids profile levels of rats against CCl ₄ induced toxicity.....	74
5	Effect of the purified protein from seeds of <i>Peganum harmala</i> pretreatment on serum urea, BUN, creatinine and uric acid levels of rats against CCl ₄ induced toxicity.....	81
6	Effect of the purified protein from seeds of <i>Peganum harmala</i> pretreatment on SOD & CAT activities and GSH & MDA levels in liver and kidney tissues of rats against CCl ₄ induced toxicity	88
7	Effect of the purified protein from seeds of <i>Peganum harmala</i> post-treatment on serum ALT, AST and ALP enzyme activities of rats against CCl ₄ induced toxicity.....	106

8	Effect of the purified protein from seeds of <i>Peganum harmala</i> post-treatment on serum total protein and lipids profile levels of rats against CCl ₄ induced toxicity.....	109
9	Effect of the purified protein from seeds of <i>Peganum harmala</i> post-treatment on serum urea, BUN, creatinine and uric acid levels of rats against CCl ₄ induced toxicity.....	116
10	Effect of the purified protein from seeds of <i>Peganum harmala</i> post-treatment on SOD & CAT activities and GSH & MDA levels in liver and kidney tissues of rats against CCl ₄ induced toxicity.....	123

List of Figures

Fig. No.		Page
1	Calibration curve for estimation of the molecular mass of the protein by gel filtration on sephadex G-100 column. (30 cm × 1.5 cm).....	26
2	Calibration curve for estimation of the molecular mass of the protein by SDS-polyacrylamide gel electrophoresis.....	27
3	DPPH radical scavenging activity of protein fractions isolated from seeds of <i>Peganum harmala</i> plant with various concentrations of ammonium sulphate.....	57
4	A typical elution profile for the behavior of protein isolated from seeds of <i>Peganum harmala</i> plant on DEAE-cellulose column (18cm × 2 cm)	60
5	A typical elution from seeds of <i>Peganum harmala</i> plant on CM-Sepharose column (18cm × 2 cm).....	61
6	A typical elution profile for the behavior of protein isolated from seeds of <i>Peganum harmala</i> plant on superdex 75 column (15cm × 2 cm)	62
7	A typical elution profile for the behavior of protein isolated from seeds of <i>Peganum harmala</i> plant on Sephadex-G-100 column (30 cm × 1.5 cm).....	64
8	<i>In vitro</i> antioxidant activity of the purified protein at different concentrations (μ g/ml) on DPPH radical.....	69
9	Dose-dependent effect of the purified protein from seeds of <i>Peganum harmala</i> pretreatment on ALT activity in blood serum against CCl ₄ induced hepatic damage.....	69

10A	Effect of the purified protein pretreatment on serum ALT activity of rats against CCl ₄ induced toxicity.....	72
10B	Effect of the purified protein pretreatment on serum AST activity of rats against CCl ₄ induced toxicity	72
11A	Effect of the purified protein pretreatment on serum ALP activity of rats against CCl ₄ induced toxicity	75
11B	Effect of the protein pretreatment on serum total protein level of rats against CCl ₄ induced toxicity	75
12A	Effect of the purified protein pretreatment on serum total lipids concentration of rats against CCl ₄ induced toxicity.	77
12B	Effect of the purified protein pretreatment on serum triglycerides level of rats against CCl ₄ induced toxicity.	77
13A	Effect of the purified protein pretreatment on serum cholesterol level of rats against CCl ₄ induced toxicity.....	79
13B	Effect of the purified protein pretreatment on serum HDL- Cholesterol level of rats against CCl ₄ induced toxicity	79
14A	Effect of the protein pretreatment on serum LDL- cholesterol level of rats against CCl ₄ induced toxicity	82
14B	Effect of the purified protein pretreatment on serum urea level of rats against CCl ₄ induced	

	toxicity.....	82
15A	Effect of the purified protein pretreatment on BUN level of rats against CCl ₄ induced toxicity.....	84
15B	Effect of the purified protein pretreatment on serum creatinine level of rats against CCl ₄ induced toxicity	84
16	Effect of the purified protein pretreatment on serum uric acid level of rats against CCl ₄ induced toxicity	86
17A	Effect of the purified protein pretreatment on liver and kidney tissues SOD activity of rats against CCl ₄ induced toxicity.....	89
17B	Effect of the purified protein pretreatment on liver and kidney tissues CAT activity of rats against CCl ₄ induced toxicity.....	89
18A	Effect of the purified protein pretreatment on liver and kidney tissues GSH of rats against CCl ₄ induced toxicity.....	92
18B	Effect of the purified protein pretreatment on liver and kidney tissues MDA level of rats against CCl ₄ induced toxicity.....	92
19A	Effect of the purified protein post-treatment on serum ALT activity of rats against CCl ₄ induced toxicity	107
19B	Effect of the purified protein post-treatment on serum AST activity of rats against CCl ₄ induced toxicity	107
20A	Effect of the purified protein post-treatment on serum ALP activity of rats against CCl ₄ induced toxicity.....	110