

# **Chemoprotective Effects of Natural Product(s) in Prostate Hyperplasia**

A Thesis Submitted in Partial Fulfillment for the Requirements of the  
Master degree in Pharmaceutical Sciences

(Pharmacology and Toxicology)

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا

إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

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## **Pre-Requisite Post-Graduate Courses**

Besides the work presented in this thesis, the candidate has attended the following courses:

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2. Clinical pharmacology and therapeutics
3. Toxicology
4. Selected topics
5. Computer sciences
6. General and physical chemistry
7. Biostatistics
- 8- Instrumental analysis

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## LIST OF ABBREVIATIONS

<b>AA</b>	Arachidonic Acid
<b>AAP</b>	4-aminophenazone
<b>AIDS</b>	Acquired immunodeficiency syndrome
<b>AKT</b>	Protein kinase B
<b>BPH</b>	Benign prostatic hyperplasia
<b>BSA</b>	Bovine serum albumin
<b>CAT</b>	Catalase
<b>COX-II</b>	Cyclooxygenase 2 enzyme
<b>DHT</b>	Dihydrotestosterone
<b>DNA</b>	Deoxyribonucleic acid
<b>E1</b>	Estrone
<b>E2</b>	Estradiol
<b>E3</b>	Estriol
<b>EA</b>	Ellagic acid
<b>ER+</b>	Estrogen receptor positive
<b>ER<math>\alpha</math></b>	Estrogen receptor alpha
<b>ER<math>\beta</math></b>	Estrogen receptor Beta
<b>GSH</b>	Reduced glutathione
<b>GSSG</b>	Glutathione disulfide
<b>HAEC</b>	Human aorta endothelial cells
<b>HRP</b>	Horseradish peroxidase
<b>IBD</b>	Inflammatory bowel diseases
<b>IL-6</b>	Interleukin 6
<b>IL-8</b>	Interleukin 8
<b>iNOS</b>	Inducible NO synthase
<b>IPSS</b>	The mean International Prostate Symptom score
<b>LD<sub>50</sub></b>	The lethal dose 50
<b>MDA</b>	Malondialdehyde
<b>MMP</b>	Matrix metalloprotein
<b>NBT</b>	Nitrobluetetrazolium
<b>NF-<math>\kappa</math>B</b>	Nuclear factor $\kappa$ B
<b>NO</b>	Nitric oxide
<b>NSAIDs</b>	Non-steroidal anti-inflammatory drugs
<b>PAP</b>	Prostatic acid phosphatase
<b>PCa</b>	Prostate cancer
<b>PE</b>	Pomegranate extract
<b>PFE</b>	Pomegranate fruit extract
<b>PGI<sub>2</sub></b>	Prostacyclin
<b>PGJ</b>	Purple grape juice
<b>PJ</b>	Pomegranate juice

<b>PLA2</b>	Phospholipase A2
<b>PMS</b>	Phenazinemethosulphate
<b>PSA</b>	Prostate specific antigen
<b>PSO</b>	Pomegranate seed oil
<b>RNA</b>	Ribonucleic acid
<b>S.C</b>	Subcutaneously
<b>SOD</b>	Superoxide dismutase
<b>TBA</b>	Thiobarbituric acid
<b>TBS</b>	Tris buffered saline
<b>TCA</b>	Trichloroacetic acid
<b>TNF-<math>\alpha</math></b>	Tumor necrosis factor alpha
<b>TPA</b>	12-O-tetradecanoylphorbol-13- acetate
<b>TPT</b>	Total pomegranate tannin extract
<b>TURP</b>	Transurethral resections of the prostate
<b>WPFE</b>	Whole pomegranate fruit extract

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