



## A Review on Medicinal uses of *Punica granatum* (Pomegranate)

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### ABSTRACT

*Punica granatum* is a local shrub of occidental Asia and Mediterranean Europe that has a rich history of conventional use in medication. *Punica granatum* and its synthetic segments have different pharmacological and toxicological properties including Antihyperlipidemic Effect, Antihyperglycemic Effect, Anti-diabetic Activity, Hepatoprotective Effects, Anticancer activity, Anti-inflammatory Activity, Healing Activity, Antimicrobial activity. The point of this current study is to illuminate the remedial utility of different pieces of pomegranate.

**Key words:** *Punica granatum*; Vernacular names, Botanical description, Phytochemicals, Pharmacological activities.

### Introduction

The family Punicaceae comprises a single genus and species the most transcendent species is *Punica granatum* (pomegranate). It is small tree, deciduous shrub which measures in the range of five and eight meters tall. This is mostly found in northern in India and Iran.

It is one of the significant endemic plants of Iran, filling in many areas all through the country, in dry and semiarid districts because of its capacity to adjust to antagonistic natural conditions, all of which have explicit organic product qualities including size, shading, taste, season of aging, and illness resistance.<sup>1</sup> The different parts of plant chemical constituents shown in table 01.

Table 01: Phytochemicals present in *Punica granatum* (pomegranate).

Juice <sup>2</sup>	Anthocyanins, glucose, ascorbic acid, ellagic acid, gallic acid; caffeic acid; catechin, EGCG, quercetin, rutin; numerous minerals, particularly iron; amino acids
Pomegranate seed <sup>3,4</sup>	3,3-Di-O-methylellagic acid, Punicic acid, Oleic acid, Palmitic acid, Stearic acid, Linoleic acid, Sterols, Tocopherols, Sex steroids
Flower <sup>5</sup>	Ellagitannins, Piperidinealkaloids, Pyrrolidinealkaloid, Pelletierinealkaloids

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Pomegranate root and bark <sup>6</sup>	Ellagitannins, Piperidinealkaloids, Pyrrolidinealkaloid, PelletierineAlkaloids
Pomegranate peel <sup>7-8</sup>	Gallic acid, Ellagic acid, Punicalin, Punicalagin, Caffeic acid, Ellagitannins, Pelletierinealkaloids, Luteolin, Kaempferol, Quercetin

**Historical Uses of Punica granatum.**

Numerous scientists have found that pomegranate is numerous inexplicable impacts for human wellbeing. The likely remedial properties of PP are wide-going and incorporate treatment also, counteraction for cardiovascular infection, cancer, dental, implants, erectile dysfunction. Other potential applications Alzheimer’s disease, dermal injuries, obesity and male infertility.<sup>9-11</sup>

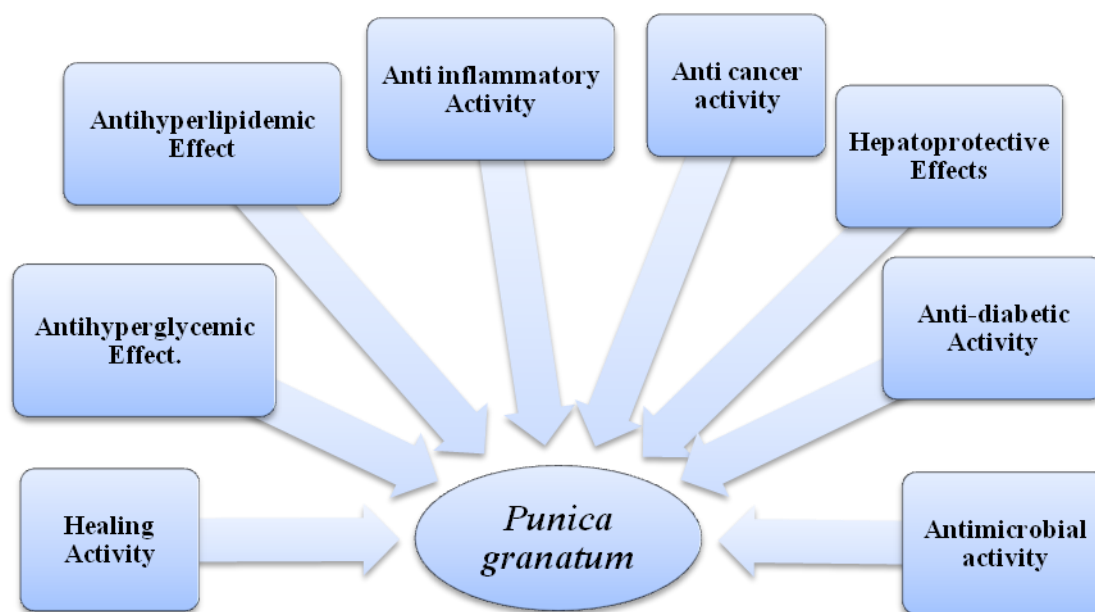
- Dutch -Granaatappel
- French- Grenade
- German Granatapfel
- India -Dadima or dalima or dalim or Anar
- Persian- Dulim or dulima
- Guatemala -Granad
- Indonesia- Gangsalan
- Samoan-Limoni
- Brazilian Roma, romeira, or romazeira
- Malaya- Delima

**Vernacular names of Punica granatum<sup>12</sup>**

- Country Recognized name
- Roman Carthage (Punica)
- Italian- Melogranato, melogranogranato, pomogranato, or pomopunico
- Spanish -Granada (the fruit), granado (the plant)

**Pharmacological activities of Punica granatum**

The pharmacological activities of Punica granatum has shown in figure no.01 and briefly discussed following are:-



**Figure 01: Pharmacological activities of Punica granatum**

**Antihyperlipidemic Effect:** The hypolipidemic impact of unrefined polyphenolic extract. Male Sprague-Dawley rodents were taken care of with a high fat diet to instigate hyperlipidemia and the treatment was completed for 28 days. The outcomes uncovered decline in the levels of TC/HDL-c proportion and serum LDL-c levels closing PP polyphenolic remove is viable in bringing down serum and hepatic lipids.<sup>13</sup>

**Antihyperglycemic Effect:** A significant progress has been made in building up the antihyperglycemic singular mixtures answerable

for it. Different dissolvable concentrates seem to have against diabetic property. On their Jordanian restorative plants overview, local creators have uncovered 61% conventional healers suggest PP for diabetes treatment.<sup>14</sup>

**Anti-inflammatory Activity:** This activity is found in seeds. The outcomes displayed polyphenols and unsaturated fats were the significant calming constituents. The concentrate from the virus squeezed seed oil of pomegranate essentially contained polyphenols and unsaturated fats which showed 31-44% restraint of sheep

cyclooxygenase and 69-81% hindrance of soybean lipoxygenase.<sup>15</sup>

**Healing Activity:** The methanolic concentrate/extract of dried pomegranate (*Punica granatum*) showed the presence of a high substance of phenolic compounds (44.0%) alongside different constituents. This concentrate was detailed as a 10% (w/w) water-solvent gel and was read for its injury mending property against an extraction twisted on the skin of Wistar rodents. It opposed to the positive control creatures getting the clear gel, it takes times for 16-18 days for complete the healing process.<sup>16</sup>

**Antimicrobial activity:** *Punica granatum* pericarp concentrate have solid antibacterial activity against the various obstruction of *Salmonella typhi*. Boiling water concentrates of 132 plants usually utilized in Argentine society medication, were evaluated for antibacterial action against *Salmonella typhi* utilizing the agar-well dissemination technique.<sup>17</sup>

**Anti-diabetic Activity**

This activity was found to be pomegranate squeeze altogether decreased all out cholesterol, low-thickness lipoproteins (LDL), the proportion of LDL/HDL (high-thickness lipoproteins), and the proportion of all out cholesterol to HDL. These discoveries show that utilization of the pomegranate juice may change coronary illness hazard factors in patients with hyperlipidemia.<sup>18</sup>

**Anti-cancer activity:** This activity showed that punicalagin has chemo preventive and chemotherapeutic exercises against cervical malignant growth in people through restraint of the  $\beta$ -catenin flagging pathway. Purified ellagic corrosive was contrasted and its forerunner punicalagin, and the absolute pomegranate juice

tannins. Every one of them decreased the practical cell number of human oral and colon tumor cells.<sup>19</sup>

The pomegranate ellagic acid and juice are potential chemo preventive specialists in prostate malignant growth. The ellagic acid might be the dynamic segment of pomegranate juice play a vital role in curing the cancer effect.<sup>20</sup>

**Hepatoprotective Effects:** *In vivo* animal studies have assessed the hepatoprotective impacts of pomegranate, in any case, the specific component and huge mixtures have not yet been portrayed. The impacts of ceaseless organization of PP on tentatively initiated liver fibrosis in rodents have been analyzed.

**CONCLUSION**

Since long time *Punica granatum* plant is obtained from the natural source of medicine and utilized in different fields such as biotechnology, pharmaceutical industry. This plant has local shrub which is broadly used for medicinal purpose of traditionally and as well as pharmacological activities. The study of plants reveals that help for various innovative drug delivery and toxicological studies.

**Disclosure Statement**

There are no conflicts of interest.

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