

Review on Phytochemistry and Phytopharmacological Activities of Tribulus Terrestris Linn (Puncture Vine)

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Abstract: *Tribulus terrestris* Linn. (Family: Zygophyllaceae), commonly referred to as Puncture vine or Gokshura, is a widely acknowledged medicinal herb with a rich history of therapeutic application in traditional medical systems such as Ayurveda, Unani, and Traditional Chinese Medicine. This review offers a thorough examination of the phytochemistry, ethnobotany, pharmacological effects, and potential health advantages of *T. terrestris*. The plant is abundant in bioactive compounds including steroidal saponins (protodioscin, diosgenin), flavonoids (kaempferol, quercetin, rutin), alkaloids, tannins, and phenolic compounds, all of which contribute to its extensive range of biological effects. Documented pharmacological activities encompass diuretic, anti-urolithic, cardioprotective, antioxidant, antidiabetic, anti-inflammatory, analgesic, antibacterial, anticancer, immunomodulatory, and neuroprotective properties. Ethnobotanical data underscore its application in the treatment of urinary disorders, sexual dysfunction, hypertension, and metabolic conditions. The presence of vital nutrients and secondary metabolites indicates its potential as a nutraceutical and dietary supplement. Despite the substantial preclinical evidence supporting its therapeutic effectiveness, additional molecular investigations and rigorously designed clinical trials are necessary to validate its safety, mechanisms of action, and clinical significance. In summary, *Tribulus terrestris* stands out as a promising medicinal and nutraceutical plant with diverse benefits for human health.

Keywords: *Tribulus terrestris*, Phytopharmacology, Nutraceutical potential, Phytochemical constituent, Therapeutic applications

