Title: *Phyllanthus amarus* as a multifunctional medicinal herb: Bioactive compounds, mechanisms, and clinical perspectives

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Abastact: Introduction: Phyllanthus amarus Schumach. & Thonn., commonly known in Traditional Chinese Medicine (TCM as Yexiazhu (叶下珠, Y`e xia ` zhu), ¯ is a widely used medicinal herb in Asian, African, and South American traditional systems. In TCM practice, Yexiazhu is traditionally prescribed for heat-clearing and detoxification, particularly in the management of liver-and kidney-related disorders, viral infections, and inflammatory conditions. Its rich phytochemical composition, including lignans, flavonoids, and tannins, has prompted increasing scientific interest in validating its traditional therapeutic applications. Materials and methods: This review critically evaluates literature published between 1977 and 2025, encompassing classical TCM texts, ethnomedicinal reports, and peer-reviewed experimental studies. Major scientific databases were surveyed to collect data on phytochemical constituents, pharmacological activities, molecular mechanisms, toxicological profiles, and available clinical evidence related to P. amarus and Yexiazhu-based preparations. Results: Pharmacological studies indicate that P. amarus exhibits hepatoprotective, antidiabetic, antimicrobial, antioxidant, antiviral, anti-inflammatory, and nephroprotective activities. These effects are primarily attributed to bioactive compounds such as phyllanthin, hypophyllanthin, geraniin, corilagin, and quercetin. Commonly used TCM preparations, including aqueous decoctions and granule formulations of Yexiazhu, demonstrate therapeutic potential through modulation of oxidative stress, inflammatory signaling pathways, viral replication, and metabolic regulation. Despite strong experimental support from in vitro and in vivo models, clinical findings remain limited, heterogeneous, and occasionally inconsistent, particularly for hepatitis B and metabolic disorders. Discussion: Collectively, P. amarus (Yexiazhu) represents a multifunctional medicinal herb with substantial experimental evidence supporting its traditional use in TCM and other medical systems. However, challenges related to species differentiation, phytochemical standardization, formulation variability, and limited highquality clinical trials restrict its translation into modern evidence-based medicine. Future research should

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