

Exploring the untapped wealth of tribal nutraceuticals

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India, a land of extraordinary biological and cultural diversity, is home to an immense repository of traditional knowledge systems that have evolved over millennia from generation to generation (Das *et al.*, 2022; Negi *et al.*, 2023). Among the diverse traditional wisdoms, the nutraceutical knowledge of tribal communities remains one of the least explored yet most promising frontiers in modern biochemical and health sciences nationally (Ghosh-Jerath *et al.*, 2015). At a time when the global scientific community is actively seeking natural, sustainable and preventive healthcare solutions, the need to systematically explore lesser-known nutraceuticals (Fig. 1) used by different tribal communities of the country has never been more urgent (Puri *et al.*, 2022). Rural and tribal populations, constituting millions across India, have long depended on forest resources for their nutritional and medicinal needs (Kumar *et al.*, 2021; Devi *et al.*, 2025). Their intimate relationship with the forest has enabled them to identify and use a wide range of plant parts to maintain health and treat various health-related problems. Studies suggested that a significant proportion of rural and tribal populations in India still rely on plant-based remedies for primary healthcare (Das *et al.*, 2025). These practices often blur the conventional boundaries between food and medicine, embodying the very essence of nutraceuticals. However, despite the richness of such traditional knowledge, only a fraction has been scientifically documented and validated. Ethnobotanical and ethnomedicinal investigations have revealed numerous plant species with novel or previously unreported uses and highlighting their potential as sources of bioactive compounds for drug and nutraceutical development (Laldingliani *et al.*, 2022). Yet, large gaps persist. Many tribal areas remain underexplored and even in studied areas, there is a lack of quantitative and biochemical evaluations. This disconnection between traditional knowledge and modern scientific inquiry represents both a challenge and an opportunity in the present era. Socio-economic transitions, habitat degradation and changing lifestyles are contributing to the loss of orally transmitted traditions. The younger generations in rural and tribal communities are increasingly detached from ancestral practices, leading to an irreversible loss of valuable ethnonutritional knowledge. Without

timely intervention, this knowledge may disappear before its scientific potential is realized. Therefore, a proper address on this aspect in the scientific world is essential.



Fig. 1: Nutraceutical tubers of *Dioscorea pubera* Blume (a lesser-known nutraceutical)

The exploration of lesser-known nutraceuticals from tribal communities is not merely an academic pursuit; it is a multidisciplinary imperative. It calls for collaborative efforts across biochemistry, ethnobotany, pharmacology, nutrition science and policy frameworks. Integrating traditional knowledge with modern analytical tools can lead to the discovery of novel functional foods, antioxidants, anti-inflammatory agents and disease-preventive compounds. Moreover, such efforts can contribute to biodiversity conservation and sustainable resource management, as ethnobotanical research has been shown to support ecological stewardship and conservation strategies. As Journal Biochemica embarks on its journey, this inaugural issue highlights a critical research direction. We invite researchers to venture beyond conventional frameworks, engage with indigenous knowledge holders and adopt interdisciplinary approaches that bridge tradition and modern science. The future of nutraceutical research lies not only in laboratories but also in forests, villages and the lived experiences of local communities. From embracing this perspective, novel pathways to health, sustainability and scientific innovation can be uncovered.

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