IJTMGH
International Journal of Travel Medicine and Global Health

Int J Travel Med Glob Health. 2026 Dec;14(4)
http://ijtmgh.com

Editorial Open Access

Nature's Pharmacopoeia on the Move: Reimagining Travel Health Through Pharmacognosy and Natural Compounds

Ebrahim Salimi-Sabour [1]

[1] Department of Pharmacognosy and Traditional Pharmacy, Faculty of Pharmacy, Baqiyatallah University of Medical Sciences, Tehran, Iran. Email: e.salimisabour@gmail.com

Introduction

Travel has always been a journey of discovery, exposing human populations to novel environments, climates, and microbial landscapes. While traditional travel medicine has predominantly focused on chemoprophylaxis, vaccinations, and vector control, the modern traveller frequently encounters subtle health challenges such as traveler's diarrhea, jet lag, altitude sickness, upper respiratory infections, and stress-induced immune suppression.[1] In an era where synthetic agents often come with side effects or rising antimicrobial resistance, turning to nature's time-tested pharmacopoeia offers a sustainable, highly effective, and holistic alternative for travel health.[2] Pharmacognosy—the study of medicinal drugs derived from plants and other natural sources—holds a unique position at the intersection of traditional wisdom and modern evidence-based medicine. Long before synthetic pharmaceuticals, travelers, traders, and explorers relied on botanical remedies to survive harsh journeys and endemic ailments.[3] Today, as global travel rebounds to unprecedented levels, it is time to reimagine travel medicine by integrating standardized natural compounds into the modern traveler's kit.[4] Natural products provide multifaceted pharmacological activities, often acting through synergistic mechanisms that make them ideal for prophylactic and symptomatic use during travel. For instance, botanical extracts rich in tannins, essential oils, and berberine have historically demonstrated potent antimicrobial and anti-diarrheal properties without disrupting the gut microbiome as harshly as broad-spectrum antibiotics.[5] Similarly, travel-induced fatigue, circadian disruption, and altitude changes tax the neuroendocrine system, whereas adaptogenic plants such as *Rhodiola rosea* and *Panax ginseng* modulate the body's stress response and enhance cognitive endurance on long-haul expeditions.[6] Furthermore, upper respiratory tract infections acquired in crowded spaces can be mitigated using natural immunomodulators like propolis and elderberry, while essential oils offer eco-friendly alternatives for vector deterrence and topical relief. Despite their popularity, the integration of natural products into travel medicine faces distinct challenges, including variability in active phytochemical concentrations, lack of standardization, and potential interactions with conventional medications that require rigorous scientific scrutiny.[7] Pharmacognosists and clinical researchers must bridge this gap by establishing rigorous quality control, pharmacokinetic profiling, and clinical trials for travel-specific herbal formulations, while also educating clinicians and advisors on botanical safety and evidence-based dosing. Ultimately, as we navigate the complexities of modern global mobility, integrating pharmacognosy into travel health empowers individuals to take a preventive, natural, and holistic approach to their well-being. By validating traditional remedies through modern analytical techniques, natural compounds can transition from peripheral remedies to cornerstone prophylaxis in the traveler's medical kit—safeguarding health from departure to return.

Reference

1. Charan S, Prakash A, Medhi B. Travel medicine - A comprehensive guide to safe world travel. Indian J Pharmacol. 2023 Nov-Dec;55(6):351-355. Doi: 10.4103/ijp.ijp_532_23.
2. SeyedAlinaghi S, Mehraeen E, Mirzapour P, Yarmohammadi S, Dehghani S, Zare S, et al. A systematic review on natural products with antimicrobial potential against WHO's priority pathogens. Eur J Med Res. 2025 Jul 1;30(1):525. Doi:10.1186/s40001-025-02717-x.
3. Orhan IE. Pharmacognosy: Science of natural products in drug discovery. Bioimpacts. 2014;4(3):109-10. Doi:10.15171/bi.2014.001.
4. Houston S. From Livingstone to ecotourism. What's new in travel medicine? Can Fam Physician. 2000 Jan;46:121-8. PMID: 10660794; PMCID: PMC1987642.
5. Cowan MM. Plant products as antimicrobial agents. Clin Microbiol Rev. 1999 Oct;12(4):564-82. Doi:10.1128/CMR.12.4.564.
6. Panossian A, Wikman G. Evidence-based efficacy of adaptogens in fatigue, and molecular mechanisms related to their stress-protective activity. Curr Clin Pharmacol. 2009 Sep;4(3):198-219. Doi:10.2174/157488409789375311.
7. Magnavacca A, Sangiovanni E, Racagni G, Dell'Agli M. The antiviral and immunomodulatory activities of propolis: An update and future perspectives for respiratory diseases. Med Res Rev. 2022 Mar;42(2):897-945. Doi:10.1002/med.21866.

Copyright © 2026 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.