

PRESCRIPTION

LATEST NEWS AND UPDATES FROM THE FACULTY OF PHARMACY, UNIVERSITI TEKNOLOGI MARA



ESTABLISHING NATURAL NOOTROPICS:

A 'smart' way to improve brain performance

By AP Dr. Nurul Aqmar Mohamad Nor Hazalin

In today's increasingly demanding world, maintaining mental sharpness has become a priority for people of all ages. Students seek better concentration, professionals strive to stay productive, and older adults look for ways to preserve memory and cognitive function. This growing interest has fueled the popularity of nootropics, commonly referred to as "smart drugs," "brain boosters," or "memory-enhancing compounds." Broadly, nootropics are substances that may help improve mental performance, including memory, attention, learning, and overall cognitive function.

IN THIS ISSUE

- Establishing Natural Nootropics: A 'smart' way to improve brain performance
- Strengthening Postgraduate Recruitment in 2026
- PHIITEX 2026: Sustainable Innovations for Tomorrow
- Bridging Training to Career Hybrid Event: UiTM Bertam—KPJ University Pharmacy Collaborative Programme 2026
- Building Career-Ready Pharmacy Graduates: Sunway Multicare Campus Tour and Internship Recruitment at UiTM Bertam
- An Educational Visit from University of Santo Thomas: Mobility Training and Internship Programs
- Mastering Animal Research: Inside The 22nd Workshop on Laboratory Rodents Care and Use 2026
- Cultivating Preclinical Expertise: The SERUMPUN 2026 Animal Handling Workshop
- Pathways and Precision: Charting Pharmacy Careers and Unveiling LabPal at SMK Tengku Idris Shah
- The Molecular Arena: Gamifying Medicinal Chemistry with HerbaXplorer at SERUMPUN 2026
- The Persona of Young PRPs: Pharmily Enrichment Programme 2026
- An Inside Look at the Educational Field Trip to the Anti-Doping Agency of Malaysia (ADAMAS)
- OSCE 2026: Assessing Tomorrow's Pharmacists Today!
- PHARMACLASH 2026
- PHARMAFIESTA 2026: PHARMAFOLK NIGHT
- PHARMFEST X PUBLIC HEALTH CAMPAIGN: SUPPLEMENTS AWARENESS 2026
- Research Innovation Exhibition at Planetary Health 2026

While nootropics were once associated mainly with pharmaceutical products, growing consumer interest in health and wellness has led to increasing attention on natural and food-derived alternatives. Plant-based nootropics, in particular, are attracting interest because they often combine traditional use with emerging scientific evidence supporting their potential cognitive benefits.



WHAT ARE NOOTROPICS?

Nootropics are “smart drugs,” “brain boosters,” or “memory-enhancing compounds” that may enhance mental performance.



ENHANCE COGNITIVE FUNCTION

They may support memory, attention, learning, focus, and overall cognitive efficiency.



SOURCES

Nootropics can be synthetic or natural. Natural nootropics are often derived from plants, foods, or traditional herbs.



WHY THEY MATTER

They are being studied for their potential to support brain health, protect neurons from stress, and promote healthy ageing.



A GROWING FIELD

Rising global interest in brain health is driving research and innovation in nootropics, especially natural and food-derived compounds.



Natural nootropics like **kesum** (*Persicaria minor*) combine traditional wisdom with modern science to support cognitive performance—naturally.



THE GROWING GLOBAL INTEREST IN NOOTROPICS

The rising demand for cognitive enhancers is reflected in the rapid growth of the global nootropics market. Industry reports estimate that the market is currently worth several billion US dollars and is expected to reach over USD 11.17 billion by 2030 [1]. This growth is driven by increasing awareness of brain health, a rapidly ageing population, and growing interest in products that support cognitive performance and healthy ageing [2].

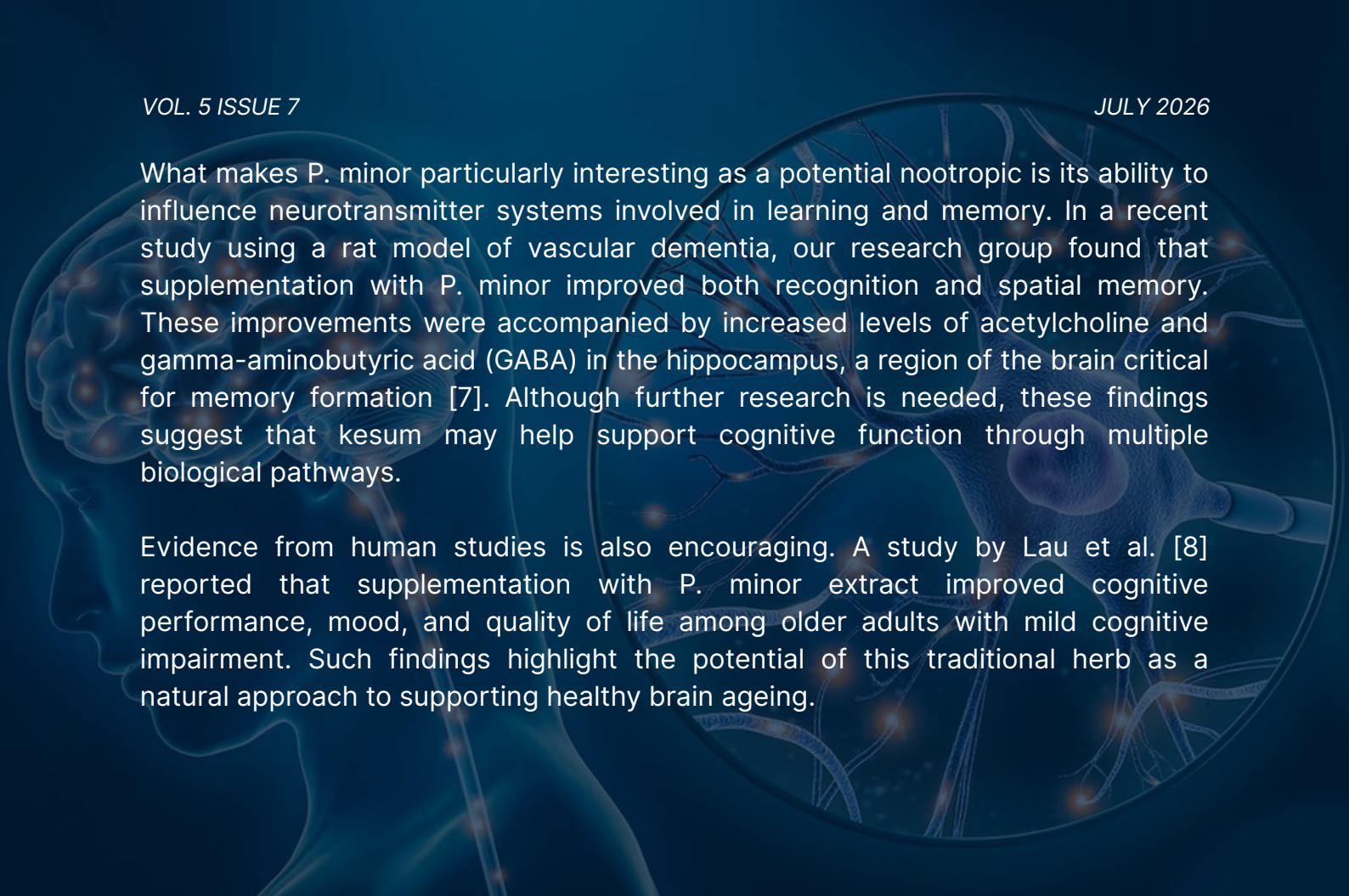
At the same time, modern lifestyles are placing unprecedented demands on mental performance. Long working hours, academic pressures, information overload, and growing concerns about mental well-being have prompted many individuals to explore strategies to help maintain focus, memory, and productivity. As a result, researchers and consumers alike are showing increasing interest in natural compounds that can support cognitive health safely and sustainably.

WHY NATURAL NOOTROPICS LIKE KESUM MATTER

While synthetic nootropics have received considerable attention, there is growing interest in natural nootropics, particularly those derived from plants with a long history of traditional use. Unlike many synthetic agents, natural botanicals are generally well-tolerated and familiar in dietary traditions. One promising natural candidate in this emerging field is *Persicaria minor*, locally known as kesum or Vietnamese coriander. Well known in Southeast Asia as a culinary herb, kesum is valued for its distinctive aroma and flavour, and is commonly used in traditional dishes such as laksa and asam pedas. Beyond its role in the kitchen, this herb is emerging as a promising candidate in the field of natural nootropics.

Extensive phytochemical profiling has revealed that *P. minor* possesses a diverse range of bioactive compounds, including flavonoids, phenolic acids, and essential oils [3, 4, 5]. These compounds possess antioxidant and anti-inflammatory properties that may help protect brain cells from damage caused by oxidative stress and chronic inflammation, two factors increasingly linked to cognitive decline and neurodegenerative diseases.

Beyond its secondary metabolites, *P. minor* is a rich source of essential nutrients, including vitamin C, carotenoids, α -tocopherol (vitamin E), and key minerals such as calcium, magnesium, iron, zinc, and potassium [6]. Together, these nutrients contribute to overall health and may support optimal brain function.



What makes *P. minor* particularly interesting as a potential nootropic is its ability to influence neurotransmitter systems involved in learning and memory. In a recent study using a rat model of vascular dementia, our research group found that supplementation with *P. minor* improved both recognition and spatial memory. These improvements were accompanied by increased levels of acetylcholine and gamma-aminobutyric acid (GABA) in the hippocampus, a region of the brain critical for memory formation [7]. Although further research is needed, these findings suggest that kesum may help support cognitive function through multiple biological pathways.

Evidence from human studies is also encouraging. A study by Lau et al. [8] reported that supplementation with *P. minor* extract improved cognitive performance, mood, and quality of life among older adults with mild cognitive impairment. Such findings highlight the potential of this traditional herb as a natural approach to supporting healthy brain ageing.

FROM TRADITIONAL HERB TO FUTURE BRAIN HEALTH SOLUTIONS

The growing scientific interest in *P. minor* demonstrates how traditional knowledge and modern research can complement one another. As researchers continue to search for safe and effective strategies to promote cognitive health, locally available plants such as kesum offer exciting opportunities for innovation.

While more clinical studies are needed to fully understand its long-term effects and mechanisms of action, the evidence accumulated so far suggests that kesum has considerable potential as a natural nootropic. More importantly, it illustrates how Malaysia's rich biodiversity can contribute to global efforts to develop sustainable, science-based solutions to maintain brain health across the lifespan.

As the search for smarter ways to support cognitive performance continues, perhaps one answer lies not only in laboratories but also in the familiar herbs that have long been part of our culinary and cultural heritage.

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Dr. Nurul is an Associate Professor at the Faculty of Pharmacy and a Research Fellow at the Integrative Pharmacogenomics Institute (iPROMISE), Universiti Teknologi MARA (UiTM). Driven by a keen interest in neurodegenerative diseases, her work focuses on understanding the molecular and neurobehavioral changes associated with ageing. She is currently investigating the molecular changes in the brain regions associated with cognitive functions using state-of-the-art omics approaches. She is also exploring the neuroprotective potential of natural products for cognitive functions in mouse models of Alzheimer's disease (AD) and vascular dementia.

