



This occasional section within the journal surveys visions and achievements, often not on the main track of the developing biomedical sciences, but all relating to discoveries and developments of medicinal – both ancient and modern. What they have in common, in one way or another, is providing further background and glances around the edges of the core discipline of pharmacognosy, as it has been and continues to evolve within our times.

Where and When is the Next Pandemic Coming From? Viral Ancestry may Provide Clues

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In the aftermath of the height of the SARS-CoV-2 viral pandemic that resulted in considerable mortality and brought the world to a standstill for several years, epidemiologists and virologists are concerned about the next pandemic. Whilst the effects of COVID-19 are still being felt globally (especially by those experiencing 'long COVID') the focus of many researchers and clinicians has now turned to predicting when and where the next pandemic will arise. Prevention and/or preparedness allow for proactive protective measures to be taken, rather than requiring the medical community to react as new pathogens arise and take hold in society. It is likely that a proactive approach may save many lives. Key to this is the ability to predict when new pathogens will emerge and instigate new pandemics. A recent study explores how viral family history has the potential to assist

scientists to identify problematic viral strains, and to therefore predict the next pandemic.¹ The authors of that study traced the lineage and evolution of 743 distinct RNA viruses and identified 79 viral lineages that pose the greatest risk to human health. This research may aid researchers and viral monitoring programs to prioritise which viruses require the greatest vigilance. This may also allow global authorities to prepare for future pandemics by guiding the development of diagnostic tools and vaccines, which could potentially save substantial loss of life.

REFERENCE

1. Zhang LLF, Brierley L, Robertson G, Chase-Topping M, Lycett S, Woolhouse M. Temporal dynamics, discovery, and emergence of human-transmissible RNA viruses. *Molecular Biology and Evolution* 2024;41(1): DOI: 10.1093/molbev/msad272



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***Rhododendron subarcticum* Leaves (Labrador tea) may Provide Treatments to Combat Drug-resistant Malaria Strains**

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Rhododendron subarcticum Harmaja (commonly known as dwarf Labrador tea) has long been used by the Inuit, Cree, Dene and Chipewyan people of Canada to treat a wide variety of ailments, including colds and influenza, congestion, tuberculosis, gastrointestinal problems, pain and headaches, and diabetes.^{1,2} Whilst there is a lack of studies evaluating the therapeutic properties of this species, the medicinal properties of related species have been relatively well reported [as reviewed in 3]. A recent study from a Canadian research group evaluated essential oils prepared from the leaves of *R. subarcticum* for anti-parasitic activity against antibiotic-resistant strains of *Plasmodium falciparum* (the main human infective malaria parasite) and reported noteworthy inhibitory activity.³ That study also analysed the composition of the essential oil and identified the

bicyclic monoterpenoid ascaridole as the major anti-Plasmodial component of the essential oil. Indeed, IC₅₀ values between 100 and 150 nM were determined for pure ascaridole. The authors highlighted the potential of this compounds as a drugable target for the development of next generation anti-malarial drugs.

REFERENCES

1. Black PL, Arnason JT, Cuerrier A. Medicinal plants used by the Inuit of Qikiqtaaluk (Baffin Island, Nunavut). *Botany* 2008;86:157-63. DOI: 10.1139/B07-052
2. Uprety Y, Asselin H, Dhakal A, Julien N. Traditional use of medicinal plants in the boreal forest of Canada: Review and Perspectives. *Journal of Ethnobiology and Ethnomedicine* 2012;8:7. DOI: 10.1186/1746-4269-8-7
3. Séguin J-C, Gagnon D, Bélanger S, Richard D, Fernandez X, Boudreau S, Voyer N. Chemical composition and antiplasmodial activity of the essential oil of *Rhododendron subarcticum* leaves from Nunavik, Québec, Canada. *ACS Omega* 2023;8(19):16729. DOI: 10.1021/acsomega.3c00235