New Multidisciplinary Review Elaborates on Eclectic Collection of Ginkgo Mechanisms of Action

Introduction and **goal of the study**

- A search string *EGb 761 OR EGb761 OR EGb-761* renders well over 2000 publications in the https://pubmed.ncbi.nlm.nih.gov/ database alone, attesting to the continued high scientific interest in the *Ginkgo biloba* special extract.
- To keep up with the constant stream of new data, secondary research summarizing and analyzing published data from different view angles comes in quite handy.

Methods

- A team of scientists from various universities in the US and India, from departments of medical sciences, chemistry, pharmacology, biological and environmental sciences, nutrition and dietetics, regenerative biology, and medicine teamed up to extensively evaluate data on the use of Ginkgo extract in age-related diseases in this narrative review.

Major topics covered in this work

- Different from what the title and the abstract suggest, the article is mostly concerned with the use of Ginkgo extract in cognitive decline.
- As a "growing body of evidence suggests … common pathology and features" of cognitive decline due to Alzheimer's disease and vascular causes, those are focus areas of the current article. Thus, they examine common treatment targets for the vasculature and the brain, and also include the gut-brain axis.
- The authors state that "**Ginkgo biloba, and its main constituent compounds … have become something of a celebrity**". They elaborate on its effect on
    - The formation of reactive oxygen species, mitochondrial damage and apoptosis
    - Inflammation and immunomodulation; inhibition of CD38
    - Cardiovascular homeostasis
    - Reduction of blood viscosity
    - Protection against protein aggregates, formed by e.g. Aβ and hyperphosphorylated TAU.
    - Cholinergic and dopaminergic neurotransmitters
    - Anti-microbial activity
    - Good tolerability and safety; low unwanted side effects
    - Etc.

Conclusion

- Although this review does not consistently distinguish between **EGb 761®** and "Ginkgo", it does provide a quite useful overview on the potential mechanisms of action that mediate its positive effect on cognition.
- Note: As most of the authors are based in the USA, "Ginkgo" is considered a food supplement, rather than medication.

Reference

Natural Product Co-Metabolism and the Microbiota–Gut–Brain Axis in Age-Related Diseases. M. Obrenovich, S. K. Singh, Y. Li, G. Perry, B. Siddiqui, W. Haq, et al. Life (Basel) 2022 Vol. 13 (1). Open access. Journal impact factor: 3.253 (2021).