

Development and Evaluation of Gingko biloba L. Extract Loaded into Carboxymethylcellulose Sublingual Films

Juste Baranauskaite-Ortasoz

Yeditepe University Atasehir, Turkey



Abstract

Oral bioavailability of flavonoids, composing *G. biloba* extract, is limited due its chemical complexity, which determines low aqueous-phase solubility and slow dissolution behavior of the extract (E). The sublingual films of *G. biloba* extract were developed using solvent casting technique. The overall research objective was to compare the effect of increasing freeze-dried *G. biloba* extract (GFD) concentrations (0.3, 0.4, 0.5, 0.6 g) within films on their mechanical properties, release profile of flavonoids (expressed as flavone glycosides), stability and disintegration time. Physicochemical evaluation of films were performed by scanning electron microscopy and FTIR. The higher elongation at the break and tensile strength values, quick release of flavonoids, as well as good stability were observed in formulation, coded FRG – 15 (the film sample contained 0.4 g of (GFD), 0.3 g of glycerol and 2 g of 2% CMC) ($p < 0.05$). Dissolution rate tests, carried to completion on FRG – 15, showed that approximately 85% of loaded flavonoid glycosides had been released. Shorter dissolution times were also noted in using FRG – 15. In particular, the release profile of flavonoid glycosides had levelled off after only 15 minutes, respectively, depicting an impressive 1.5 – 1.7 increase rate, compared to the freeze-dried control extract. The data obtained could lay the groundwork for further studies, concerning development of sublingual films as *G. biloba* extract-based dosage forms, which might increase the multifunctional properties and pharmacological activity closer to desired level.



Biography

Juste Baranauskaite-Ortasoz is currently working as Assistant professor at Department of Pharmaceutical Technology, Faculty of Pharmacy, University of Yeditepe, Istanbul, Turkey. She obtained his PhD degree in 2018 from the Lithuanian University of Health Sciences, Kaunas, Lithuania for a thesis entitled: The Influence Of Technological Factors On The Physico-Mechanical Properties Of Powders Containing Oregano (*Origanum Onites* L.) Herb Extract And The Release Of Active Ingredients From Capsules. She is having 5 years teaching experience. Focus is on the search for a Phytochemical estimation, liposomes, microcapsules, nanocapsules and in situ gel, nanofiber preparations. He has published 11 scientific papers, wrote 1 books. In 2018 she got third place in Young Researcher Award in Lithuanian University of Health Sciences for her research work in the field of Pharmaceutical Sciences.

Publications

- Optimization of carvacrol, rosmarinic, oleanolic and ursolic acid extraction from oregano herbs
- Formulation and characterization of Turkish oregano microcapsules prepared by spray-drying technology
- The Influence of Different Oregano Species on the Antioxidant Activity Determined Using HPLC Postcolumn DPPH Method and Anticancer Activity of Carvacrol and Rosmarinic Acid
- Impact of Gelatin Supplemented with Gum Arabic, Tween 20, and β -Cyclodextrin on the Microencapsulation of Turkish Oregano Extract
- Effect of liquid vehicles on the enhancement of rosmarinic acid and carvacrol release from oregano extract liquisolid compacts

[4th International Conference on Pharmaceutics & Advanced Drug Delivery Systems](#) | Frankfurt, Germany | April 05, 2021

Citation: Juste Baranauskaite-Ortasoz, Development and Evaluation of Gingko biloba L. Extract Loaded into Carboxymethylcellulose Sublingual Films, Pharmaceutical Science 2021, 4th International Conference on Pharmaceutics & Advanced Drug Delivery Systems, Frankfurt, Germany, April 05, 2021