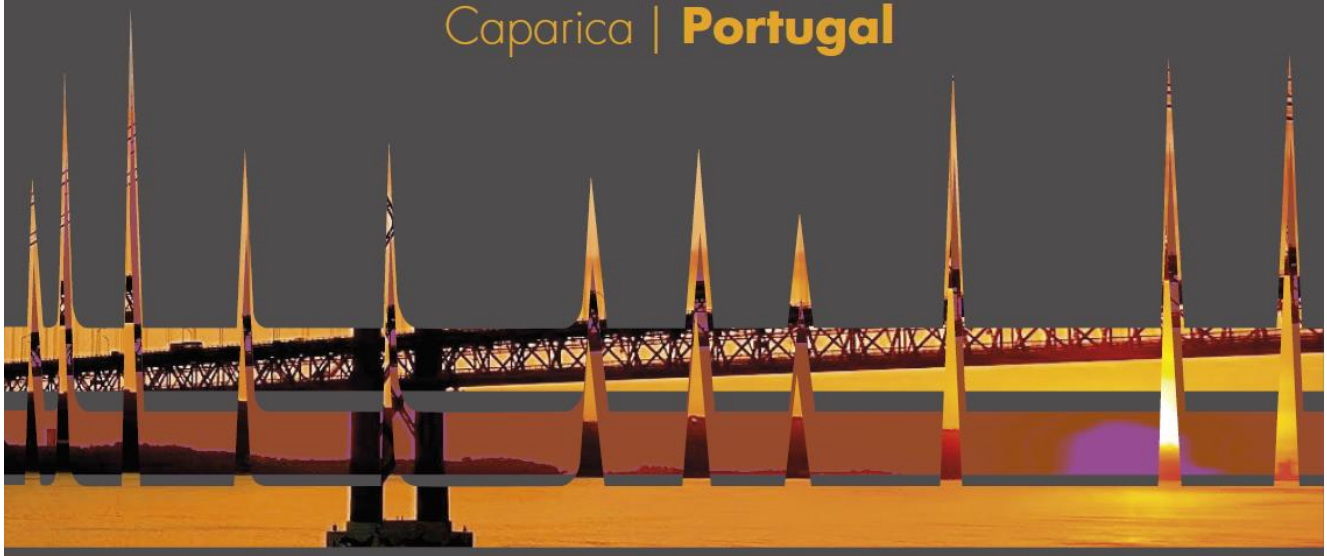
11º CONGRESSO NACIONAL DE **CROMATOGRAFIA**

20 anos CROMATOGRAFIA

11th NATIONAL MEETING ON CHROMATOGRAPHY

9|11 Dezembro 2019

Caparica | **Portugal**



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SCIENTIFIC AND SOCIAL PROGRAM

SATURDAY, DECEMBER 7

09:00 Short courses registration and FCT NOVA

1. *Sample preparation methods for chromatographic analysis*. **9:30 to 12:30**
   Eduardo Mateus, Resolution Lab, CENSE-FCT-NOVA, Portugal

2. *MS hyphenation with LC and GC*. **14:30 to 17:30**
   Marco Gomes da Silva, Resolution Lab, LAQV-FCT NOVA, Portugal

3. *Validation of Chromatographic Methods*. **14:30 to 17:30**
   Alice Mosca – AIM, Portugal and Ricardo Bettencourt Silva – FCUL, Portugal

SUNDAY, DECEMBER 8

4. *Comprehensive gas chromatography – GC x GC*. **9:30 to 12:30**
   Philip Marriott, School of Chemistry, Faculty of Science at Monash University – Australia
5. *HPLC*. **14:30 to 17:30**
   Marco Gomes da Silva, Resolution Lab, LAQV-FCT NOVA, - Portugal

WEDNESDAY, DECEMBER 11

6. *Large-scale efficient extraction of chemical information from untargeted chemical profiling (GC/MS) data*. **14:30 to 17:30**
   Rasmus Bro, Copenhagen University, Faculty of Sciences – Denmark

P11 UV-C radiation increases Vitamin D2 content in *Pleurotus ostreatus*

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Mushrooms have been traditionally recognized for their nutritional and medicinal value, and countless investigations have reported highly nutritious content as well as medicinal properties such as anticancer, antimicrobial, hypocholesterolemic, antioxidant, among others. These properties are attributed to bioactive compounds such as ergosterol (precursor of vitamin D2) and other steroids, phenolic compounds, and vitamins. Vitamin D2, in particular, plays an important role in many human metabolic processes. Mushrooms are the only non-animal food source of vitamin D2, which is also formed during UV exposure[1]. Since dietary sources are scarce, vitamin D deficiency can cause serious health problems; studies of vitamin D have received considerable attention in recent years, supported by the growing number of deficiency reports, *e.g*. rickets, osteoporosis, multiple sclerosis and cardiovascular disease, among others [2].

The present work reports the effectiveness of UV-C radiation on increasing the content of vitamin D2 in sliced *Pleurotus ostreatus* (Jacq. ex Fr.) P. Kumm. samples. The irradiation was performed in a UV chamber at the intensity 0 (non-irradiated), 200, 800, 3200 mJ/cm^2 and different exposure times: 0, 2, 6 and 10 min. Vitamin D2 was determined using high performance liquid chromatography coupled to a UV detector [2,3].

It was verified a significant (p<0.050) interaction (exposure time x UVC) among factors, indicating that the effect of each UVC dose was modulated by exposure time and *vice versa*. Nonetheless, it is obvious that the application of UV-C radiation induced a clear increase in the quantity of vitamin D2, most likely due to the conversion of some of the ergosterol content naturally present in these mushrooms. In what concerns, exposure time, the adequate choice would be 6 min (125 µg/g DW of vitamin D2), as no significant increases were attained with the maximum assayed time (10 min). On the other hand, and despite the statistically significant differences, the advised UV-C dose would be 200 mJ/cm, particularly considering that this option would be less expensive, without relevantly compromising the increase in vitamin D2.

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2. O.Taofiq, Â. Fernandes, L. Barros, M. F. Barreiro, I. C. F. R. Ferreira, Trends in Food Science and Technology, 70 (2017) 82–94.
3. R.V.C. Cardoso, Â. Fernandes, J.C.M. Barreira, S.C. Verde, A. L. Antonio, A.M. Gonzaléz-Paramás, L. Barros, I.C.F.R. Ferreira, Food Chemistry, 278 (2019) 760-766.