The Second International Symposium

Medicinal Plants and Materials



15 - 17 February 2019,
Elmouradi Hotel, Tozeur
(South of Tunisia)

Abstracts of Lectures & Communications

MPM | 2019

The Second International Symposium
Medicinal Plants and Materials
(MPM-2019)

OC37

Investigation of the effect of rose essential oil component phenyl ethyl alcohol on hydrolytic degradation of Poly(Lactic acid)

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Abstract

Polymeric materials are widely used materials today. The use of so much cause environmental problems such as waste problems. In addition to use for different purposes in accordance with the creatures also revealed the biocompatibility and biodegradability properties, such as the obligation of these materials. Therefore, applications to biopolymers, especially Poly(Lactic acid)(PLA) have increased in recent years. Hydrolytic degradation is one of the most important features for bio-applications. The acceleration and control of this degradation process is an important argument for determining and increasing the usage areas of the material. Therefore, in this study, Pheryl ethyl alcohol(PEA), which has no cytotoxic effect in the biocompatible and biodegradable polymer matrix, was mixed in different proportions and the effect on the hydrolytic degradation process of Phenyl ethyl alcohol was evaluated. For this purpose, the films were prepared according to the solution casting method by mixing the polymer and the natural component in different proportions. Samples were placed in the incubator at the human body temperature (37°C) and pH (7.4) with Phosphate solution medium. The time-dependent hydrolytic degradability behavior of this material was investigated.

Keywords: *Hydrolytic Degradation, Rose essential oil, Pheryl ethyl alcohol, Poly (lactic acid)*

Acknowledgment: *The study was financially supported by Çanakkale Onsekiz Mart University Scientific Research Projects Coordination Unit (project number of FBA-2018-1368). We would also like to thank the Çanakkale Onsekiz Mart University, Science and Technology Application & Research Center for their support regarding the analyses.*



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Certificate of participation

The Organizing Committee of the Second International Symposium Medicinal Plants and Materials (MPM-2019) organized in Tozeur (Tunisia) on February 15 to 17, 2019, certify that:

Coskun Yalcin

presented an Oral communication entitled:

Investigation of the effect of rose essential oil component phenyl ethyl alcohol on hydrolitic degradabion of poly(lactic acid)

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